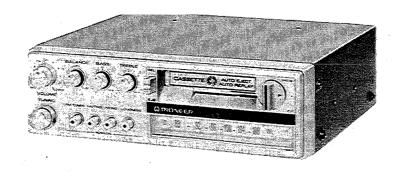
KPX-600 u.c

SUPER TUNER COMPONENT CAR STEREO CASSETTE DECK WITH FM-STEREO

SERVICE MANUAL



Subject:

For Cassette Mechanism, refer to the Service Manual of Model KPH-9000 or KP-66G.

SPECIFICATIONS

(Volume: -30 dB) Maximum output level	
Tape speed	pact cassette tape (C-30~C-90)

FM tuner	
Frequency range	
Usable sensitivity	
50 dB quieting sensitivity	14.3 dBf $(1.4\mu V/75\Omega)$
Signal-to-noise ratio	68 dB
Capture ratio	1.7 dB
Selectivity	74 dB (±400 kHz)
Image rejection	61 dB
IF rejection	80 dB
Distortion	. 0.8% (at 65 dBf, 400 Hz, mono)
Distortion	0.95% (at 65 dBf, 1 kHz, stereo)
Ereguency response	30∼15,000 Hz (−3 dB)
Muting lovel	10.2 dBf $(0.9\mu V/75\Omega)$
Stereo separation	32 dB (at 65 dBf, 1 kHz)

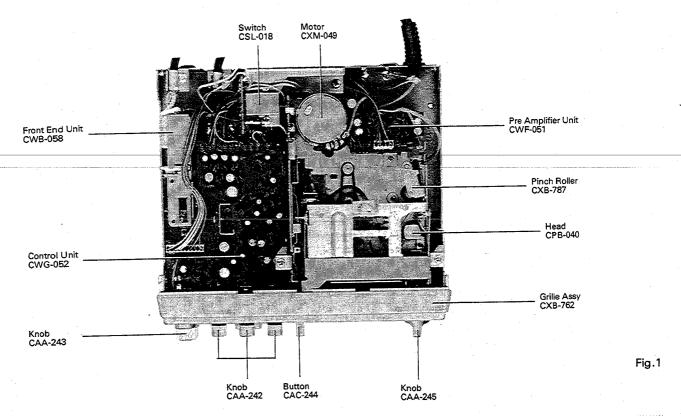
Note

Specifications and the design subject to possible modification without notice due to improvements.



1.	PARTS LOCATION1
2.	CIRCUIT DESCRIPTION
3.	ADJUSTMENT
	3.1 FM IF Adjustment
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6.	CONTROL UNIT (CWG-052)
7.	IF/MPX UNIT (CWE-234)
8.	SWITCH UNIT
9.	FRONT END UNIT (CWB-058)
10.	SENSING UNIT (CWK-172)
11.	PRE AMPLIFIER UNIT (CWF-051)
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PARTS LOCATION



2.

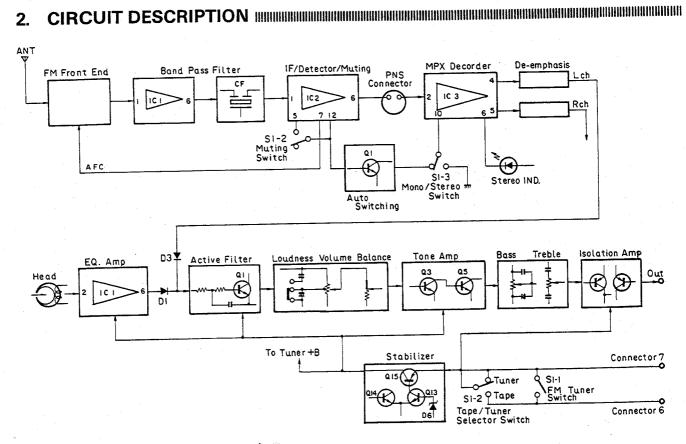


Fig. 2

3.1 FM IF ADJUSTMENT

• Connection Diagram

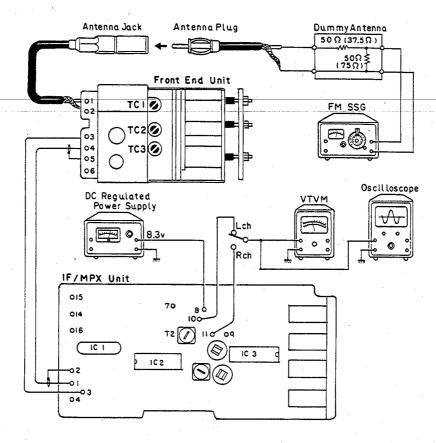


Fig. 3

• To Adjust

- 1. Add output signal of 0 dB from FM SSG and adjust T2 (yellow color) so that the pointer of center meter (use one graduated for over $200\mu A$) will come to the center. When using a DC volt ammeter (use one graduated for over $200\mu A$), set the pointer to 0.
- Add output signal of 98MHz 60 dB from FM SSG and tune to 98 MHz on the dial (the pointer of the center meter is at the center).
- Add output signal of 5 dB from FM SSG and adjust T1 (Front End) so that the output will become maximum.
- Add output signal of 0 dB from FM SSG, adjust T2 (yellow color) so that the pointer of center meter is at the center.

Note:

When adjusting, do not move T1 of the IF/MPX unit.

3.2 FM TRACKING ADJUSTMENT

• Connection Diagram

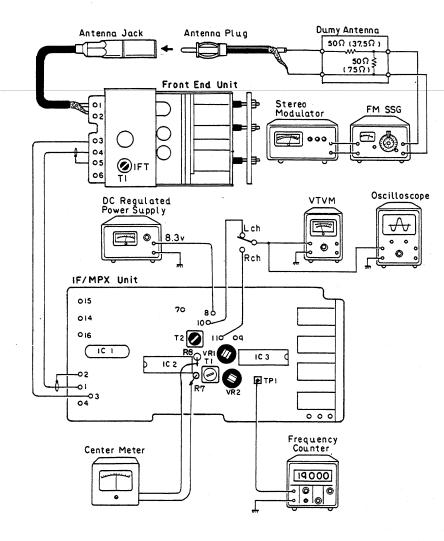


Fig. 4

To Adjust

FM SSG frequency	Pointer Position	Adjustment Point	Note
1. 87 MHz (400 Hz, 100% modulation), output level 8 dB (μV)	Minimum	тсз	87 MHz can be received
 109 MHz (400 Hz, 100% modulation), output level 8 dB (μV) 	Maximum		Check if 109 MHz can be received
3. 98 MHz (400 Hz, 100% modulation), output level 5 dB (μV)	Tune position	TC1, TC2	Maximum output

3.3 FM MPX ADJUSTMENT

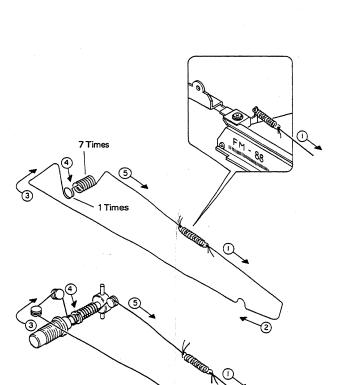
• Connection Diagram

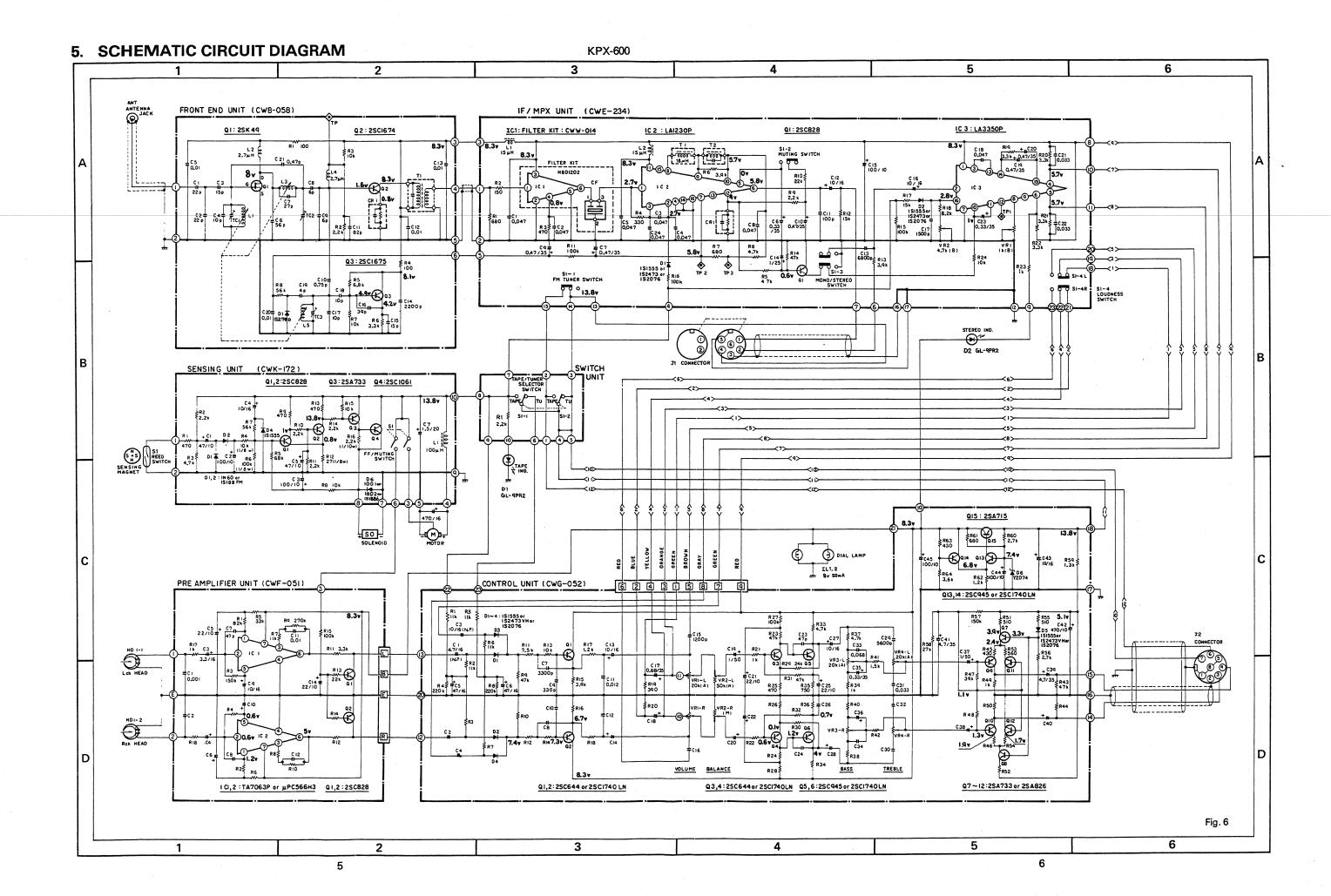
Connect as shown in Fig. 3. Set the position of the switch as well.

To Adjust

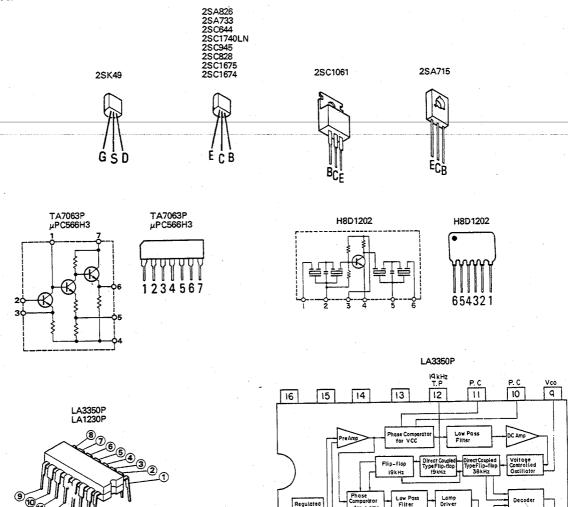
- Add unmodulated signal of 60 dB from FM SSG and adjust VR2 so that the frequency counter will indicate 19 kHz ±20 Hz.
- 2. Set MONO switch to OFF (STEREO) position.
- 3. Set FM SSG to 98 MHz, output level to 60 dB (μ V) and modulation frequency to 1 kHz.
- Set stereo modulator output to pilot modulation level of 7.5 kHz (deviation) and main modulation level (L + R) of 67.5 kHz (deviation).
- 5. Turn the tuning knob to 98 MHz.
- Adjust the separation adjustment VR1 so that cross talk of the opposite channel is reduced to minimum (Rch/Lch).

4. DIAL STRINGING





• IC's and Transistors

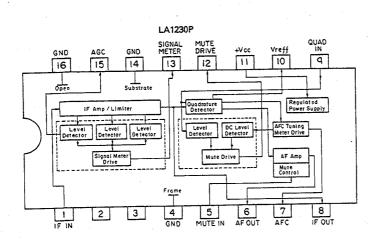


2

3

PRE OUT

4 L OUT 5 R OUT 8 SWITCHING



• Parts Connection

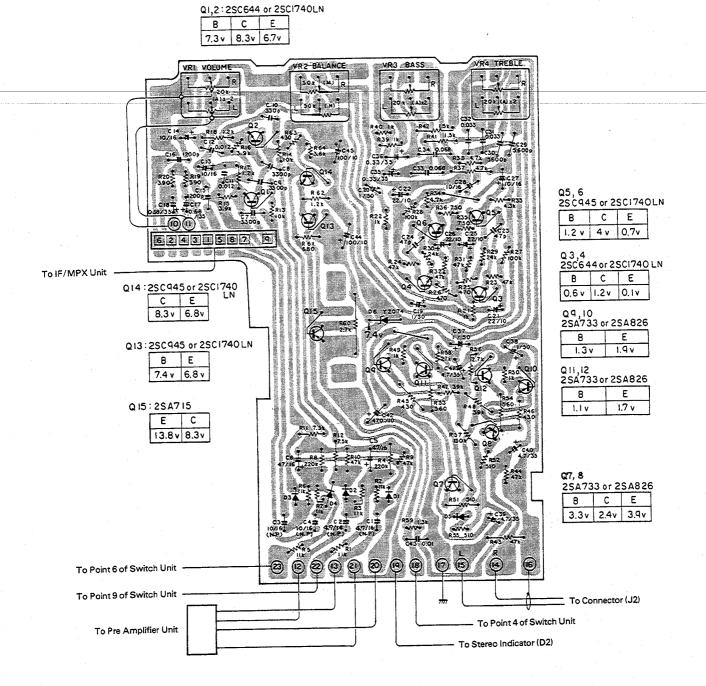


Fig. 7

• Parts List

NOTICE: Of the descriptive symbols of the resistor and capacitor, the encircled alphabetic letter denotes the allowable error.

Example: RD1/4V

RD1/4VS100 ① CEA100 ② 25

C: ±0.25pF D: ±0.5pF F: ±1pF G: ±2% J: ±5% K: ±10% M: ±20% X: ±20% Z: +80 % P: +100 %

MISCELLANEOUS

RESISTORS

Ref. Key	Parts No.	Description	Ref. Key	Parts No.	Description	on	Ref. Key	Parts No.	Description	า
Q1~4	2SC644	Transistor	R1~3	RD1/4VS113J	11kΩ	1/4W	C1,2	CEA4R7M16NP	4.7µF	16V
	2SC1740LN	Transistor	R4	RD1/4VS224J	220kΩ	1/4W	C3,4	CEA100M16NP	10µF	16V
Q5,6	2SC945	Transistor	R5~7	RD1/4VS113J	11kΩ	1/4W	C5,6	CEA470P16	47µF	16V
/-	2SC1740LN	Transistor	R8	RD1/4VS224J	220kΩ	1/4W	C7,8	CQMA332K50	3300pF	50V
Q7~12	2SA733	Transistor	R9,10	RD1/4VS473J	47kΩ	1/4W	C9,10	CKDYB331K50	330pF	50∨
	2SA826	Transistor	R11,12	RD1/4VS752J	7.5kΩ	1/4W	C11,12	CQMA123K50	0.012µF	50V
Q13,14	2S C945	Transistor	R13,14	RD1/4VS103J	10kΩ	1/4W	C13,14	CEA100P16	10µF	16V
Q10,11	2SC1740LN	Transistor	R15,16	RD1/4VS392J	3.9kΩ	1/4W	C15,16	CQMA122K50	1200pF	50V
Q15	2SA715	Transistor	R17,18	RD1/4VS122J	1.2kΩ	1/4W	C17,18	CSZAR68M35	0.68µF	35∨
D1~5	1S1555 or	Diode	R19,20	RD1/4VS391J	390Ω	1/4W	C19,20	CEA010P50	1μF	50V
	1\$2076 or	Diode	R21,22	RD1/4VS102J	1kΩ	1/4W	C21,22	CEA220P10	22µF	10V
	1\$2473VH	Diode	R23,24	RD1/4VS473J	47kΩ	1/4W	C23,24	CCDSL470K50	47pF	50V
D6.	YZ-074	Diode	R25,26	RD1/4V\$471J	470Ω	1/4W	C25,26	CEA220P10	22µF	10V
VR1	CCS-183	Volume, 20kΩ (A)	R27,28	RD1/4VS104J	100kΩ	1/4W	C27,28	CEA100P16	10µF	16
VR2	CCS-173	Volume, 50kΩ (MN)	R29,30	RD1/4VS243J	24kΩ	1/4W	C29,30	CQMA562K50	5600pF	50V
VR3,4	CCS-172	Volume, 20kΩ (A)	R31,32	RD1/4VS473J	47kΩ	1/4W	C31,32	CQMA333K50	0.033µF	50∨
V113,4	CC3-172	Voiding, Zorde (74)	R33,34	RD1/4V\$432J	4.3kΩ	1/4W	C33,34	CQMA683K50	0.068µF	50 v
			R35,36	RD1/4VS751J	750Ω	1/4W	C35,36	CSZAR33M35	0.33µF	35∨
			R37,38	RD1/4V\$472J	4.7kΩ	1/4W	C37,38	CEA010P50	1μF	50\
			R39,40	RD1/4VS102J	4.7 kΩ	1/4W	C39~41	CEA4R7P35	4.7μF	35V
				DD4 / 11 / 0450 1	4.51.0	4.04	040	à du ann	470 5	401
			R41,42	RD1/4VS152J	1.5kΩ	1/4W	C42	CCH-002	470µF	10V
			R43,44	RD1/4VS473J	47kΩ	1/4W	C43	CEA100P16	10μF	16V
			R45,46	RD1/4VS431J	430Ω	1/4W	C44,45	CEA101P10	100µF	10V
			R47,48	RD1/4VS393J	39kΩ	1/4W				
			R49,50	RD1/4VS102J	1kΩ	1/4W		•		
			R51,52	RD1/4VS511J	5109	1/4W				
			R53,54	RD1/4VS561J	560♀	1/4W				
			R55	RD1/4VS511J	510Ω	1/4W				
			R56	RD1/4V\$272J	2.7kΩ	1/4W				
			R57	RD1/4VS154J	150kΩ	1/4W				
			R58	RD1/4VS273J	27kΩ	1/4W				
			R59	RD1/4VS132J	1.3kΩ	1/4W				
			R60	RD1/4PS272J	2.7kΩ	1/4W		*		
			R61	RD1/4VS681J	680Ω	1/4W				
			R62	RD1/4VS122J	1.2kΩ	1/4W				
			R63	RD1/4VS431J	430Ω	1/4W				
			R64	RD1/4VS362J	3.6kΩ	1/4W				

• Parts Connection

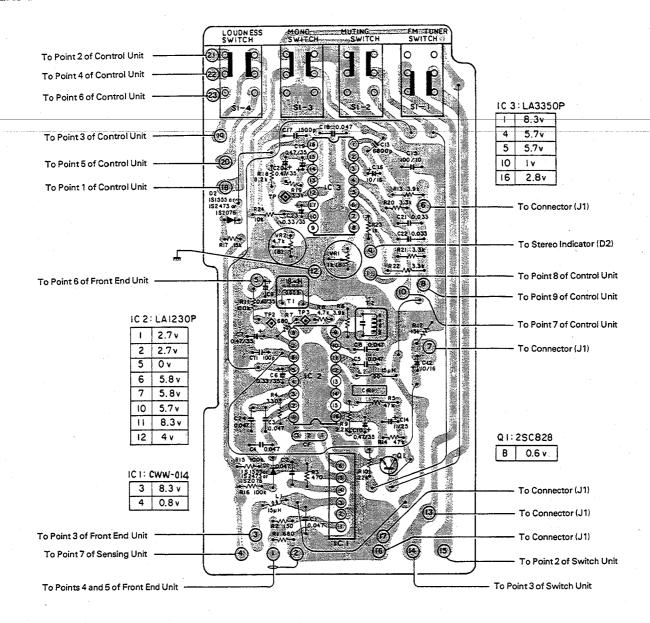


Fig. 8

• Parts List

MISCELL	ANEOUS		RESISTORS CAPACITORS		ORS					
Ref. Key	Parts No.	Description	Ref. Key	Parts No.	Description	าก	Ref. Key	Parts No.	Description	n
IC1	CWW-014	Filter Kit	R1	RD1/4VS681J	680Ω	1/4W	C1~5	CKDYF473Z25	0.047µF	25∨
1C2	LA1230P	IC	R2	RD1/4VS151J	150Ω	1/4W	C6	CSZAR33M35	0.33µF	35V
IC3	LA335OP	IC	R3	RD1/4VS471J	470Ω	. 1/4W	C 7	CSZAR47M35	0.47µF	3 5V
Q1	2SC828	Transistor	R4	RD1/4VS331J	330Ω	1/4W	C8	CKDYF473Z25	0.047µF	25V
D1,2	1S1555 or	Diode	R5	RD1/4VS473J	47kΩ	1/4W	C9,10	CSZAR47M35	0.47µF	35∨
	1S2076 or	Diode	R6	RD1/4VS392J	3,9kΩ	1/4W	C11	CDKYB101K50	100pF	50V
	1S2473	Diode	R7	RD1/4PS681J	680Ω	1/4W	C12	CEA100P16	10µF	16V
L1,2	CTF-016 or	Ferri-Inductor, 15µH	R8	RD1/4PS472J	4.7kΩ	1/4W	C13	CQMA682K50	6800pF	50∨
	CTF-078	Ferri-Inductor, 15µH	R9	RD1/4VS222J	2.2kΩ	1/4W	C14	CSZA010M25	1μF	25∨
T1	CTC-090	Coil, 18µH	R10	RD1/4VS223J	22kΩ	1/4W	C15	CEA101P10	100µF	10V
T2	CTC-091	Coil	R11	RD1/4V\$104J	100kΩ	1/4W	C16	CEA100P16	10µF	16V
VR1	C92-617	Volume, 1kΩ (B)	R12	RD1/4VS153J	15kΩ	1/4W	C17	CQSH152J50 or	1500pF	50∨
VR2	C92-618	Volume, 4.7kΩ (B)	R13	RD1/4VS392J	3.9kΩ	1/4W		CQSA152J50	1500pF	50V
S1	CSG-106	Switch	R14	RD1/4VS473J	47kΩ	1/4W	C18	CQMA473K50	0.047µF	50∨
CR1	CWW-033	Multiple Components	R15,16	RD1/4VS104J	100kΩ	1/4W	C19,20	CSZAR47M35	0.47µF	35V
			R17	RD1/4VS153J	15kΩ	1/4W	C21,22	CQMA333K50	0.033µF	50V
		•	R18	RD1/4VS822J	8.2kΩ	1/4W	C23	CSZAR33M35	0.33µF	35∨
			R19~22	RD1/4VS332J	3.3kΩ	1/4W	C24	CKDYF473Z25	0.047µF	25V
			R23	RD1/4VS102J	1kΩ	1/4W				
			R24	RD1/4VS103J	10kΩ	1/4W				

• Parts Connection

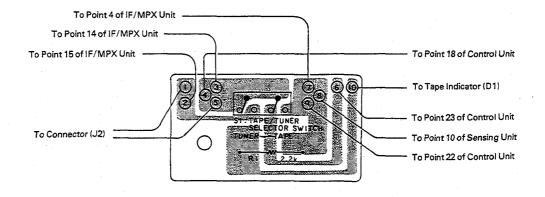


Fig. 9

Parts List

Ref. Key	Parts No.	Description
R1	RD1/4PS222J	Resistor 2.2kΩ 1/4W
S1	CSL-018	Switch

9. FRONT END UNIT (CWB-058)

• Parts Connection

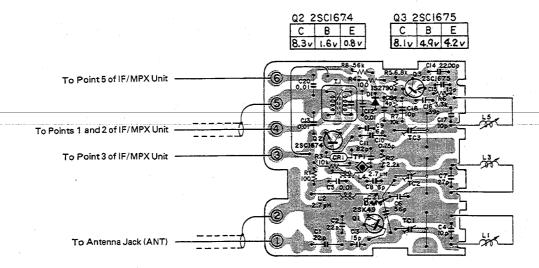


Fig. 10

• Parts List

MISCEL	LANEO	JS

Ref. Key	Parts No.	Description
Q1	2SK49-H2	FET
Q2	2SC1674	Transistor
Q3	2SC1675-M	Transistor
D1	1\$2790	Diode
L2	CTF-039 or	Ferri-Inductor, 2.7µH
	CTF-065	Ferri-Inductor, 2.7µH
L4	CTF-039	Ferri-Inductor, 2.7µH
T1	CTC-043	IF Transformer
TC1~3	CCG-008	Ceramic Trimmer,
		10pF
CR1	CCX-001	Multiple Components

RESISTORS

Ref. Key	Parts No.	Description	
R1	RD1/8VS101J	100Ω	1/8W
R2	RD1/8VS222J	2.2kΩ	1/8W
R3	RD1/8VS103J	10kΩ	1/8W
R4	RD1/8VS101J	100Ω	1/8W
R5	RD1/10VS682J	6.8kΩ	1/10W
R6	RD1/10V\$332J	3.3kΩ	1/10W
R7 .	RD1/10VS103J	10kΩ	1/10W
R8	RD1/8VS563J	56kΩ	1/8W

Ref. Key	Parts No.	Description	
C1	CCDSL220K500	22pF	500V
C2	CCDSL220J50	22pF	50V
C3	CCDSL150J50	15pF	50V
C4	CCDRH100F50	10pF	50V
C5	CKDYF103Z25	0.01µF	25 V
C6	CCDSL560J50	56pF	50V
C7	CCDRH270J50	27pF	50V
C8,9	CCDCH060D50	6pF	50V
C10	CGBR75K500	0.75pF	500∨
C11	CCDSL820J50	82pF	50V
C12	CKDYD103M50	0.01µF	50V
C13	CKDYF103Z25	0.01µF	25V
C14	CKDYB222K50	2200pF	50V
C15	CCDTH150J50	15pF	50V
C16	CCDTH390J50	39pF	50V
C17,18	CCDTH100F50	10pF	50V
C19	CCDCH040D50	4pF	50V
C20	CKDYF103Z25	0.01µF	25V
C21	CGBR47K500	0.47pF	500V

10. SENSING UNIT (CWK-172) MANAGEMENT MANAGE

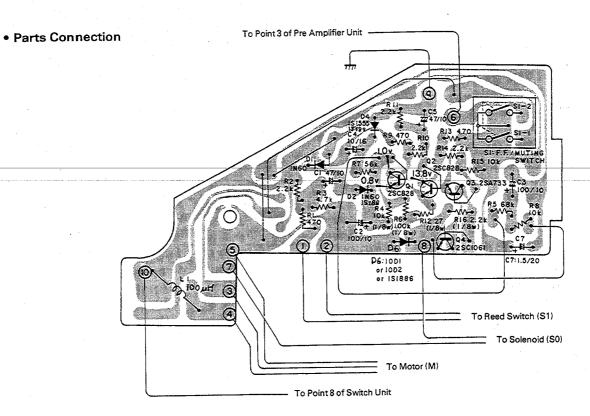


Fig. 11

• Parts List

MISCELLANEOU	JS
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Ref. Key	Parts No.	Description
Q1,2	2SC828	Transistor
Q3	2SA733	Transistor
Q4	2SC1061	Transistor
D1,2	IN-60	Diode
	1S188FM-1	Diode
D3	VACANT	
D4	1S1555	Diode
D5	VACANT	
D6	10D1 or	Diode
	10D2 or	Diòde
	1S1886	Diode
L1	CTH-054	Coil, 100µH
S1	CSN-047	Switch

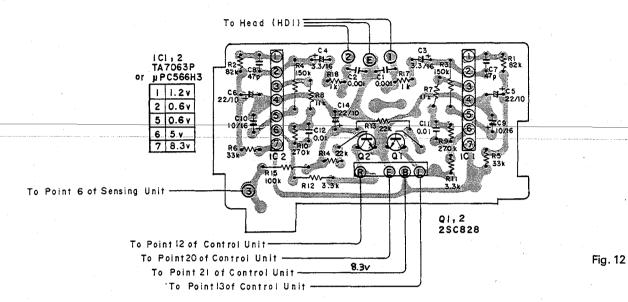
RESISTORS

Ref. Key	Parts No.	Description	
R1	RD1/4VS471J	470Ω	1/4W
R2	RD1/4VS222J	2.2kΩ	1/4W
R3	RD1/4VS472J	4.7kΩ	1/4W
R4	CCN-023	10kΩ	1/8W
R5	RD1/4VS683J	68kΩ	1/4W
R6	RD1/8PS104J	100kΩ	1/8W
R7	RD1/4VS563J	56kΩ	1/4W
R8	RD1/4VS103J	10kΩ	1/4W
R9	RD1/4VS471J	470Ω	1/4W
R10,11	RD1/4VS222J	2.2kΩ	1/4W
R12	CCN-022	27Ω	1/8W
R13	RD1/4VS471J	470Ω	1/4W
R14	RD1/4VS222J	2.2kΩ	1/4W
R15	RD1/4VS103J	10kΩ	1/4W
R16	CCN-021	2.2kΩ	1/8W

Ref. Key	Parts No.	Description	n
C1	CEA470P10	47µF	10V
C2,3	CEA101P10	100µF	10V
C4	CEA100P16	10μF	16V
C5	CEA470P10	47µF	10V
C6	VACANT		
C7	C40-623-K or	1.5µF	20V
	C40-723-K or	1.5µF	20V
	C40-823-K	1.5µF	20V

11. PRE AMPLIFIER UNIT (CWF-051)

• Parts Connection



• Parts List

MISCE	LLAN	EOUS

Ref. Key	Parts No.	Description	
IC1,2	TA7063P or	IC	_
•	μPC566H3	IC	
Q1,2	2S C828	Transistor	

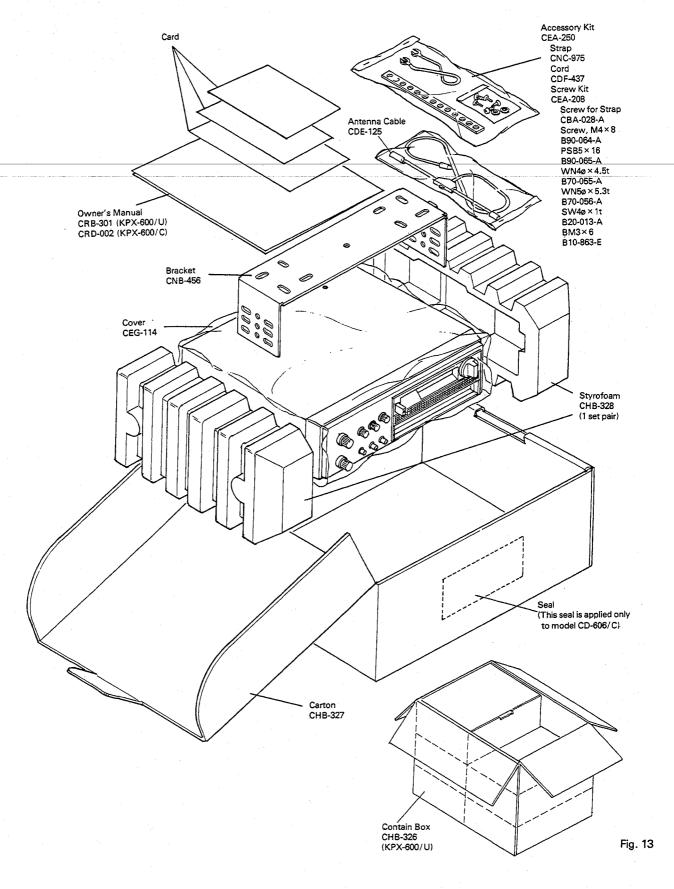
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Ref. Key	Parts No.	Description	
R1,2	RD1/4VS823J	82kΩ	1/4W
R3,4	RD1/4VS154J	150kΩ	1/4W
R5,6	RD1/4VS333J	33kΩ	1/4W
R7,8	RD1/4VS113J	11kΩ	1/4W
R9,10	RD1/4VS274J	270kΩ	1/4W
R11,12	RD1/4V\$332J	3.3kΩ	1/4W
R13,14	RD1/4VS223J	22kΩ	1/4W
R15	RD1/4V\$104J	100kΩ	1/4W
R16	VACANT		
R17,18	RD1/4VS102J	1kΩ	1/4W

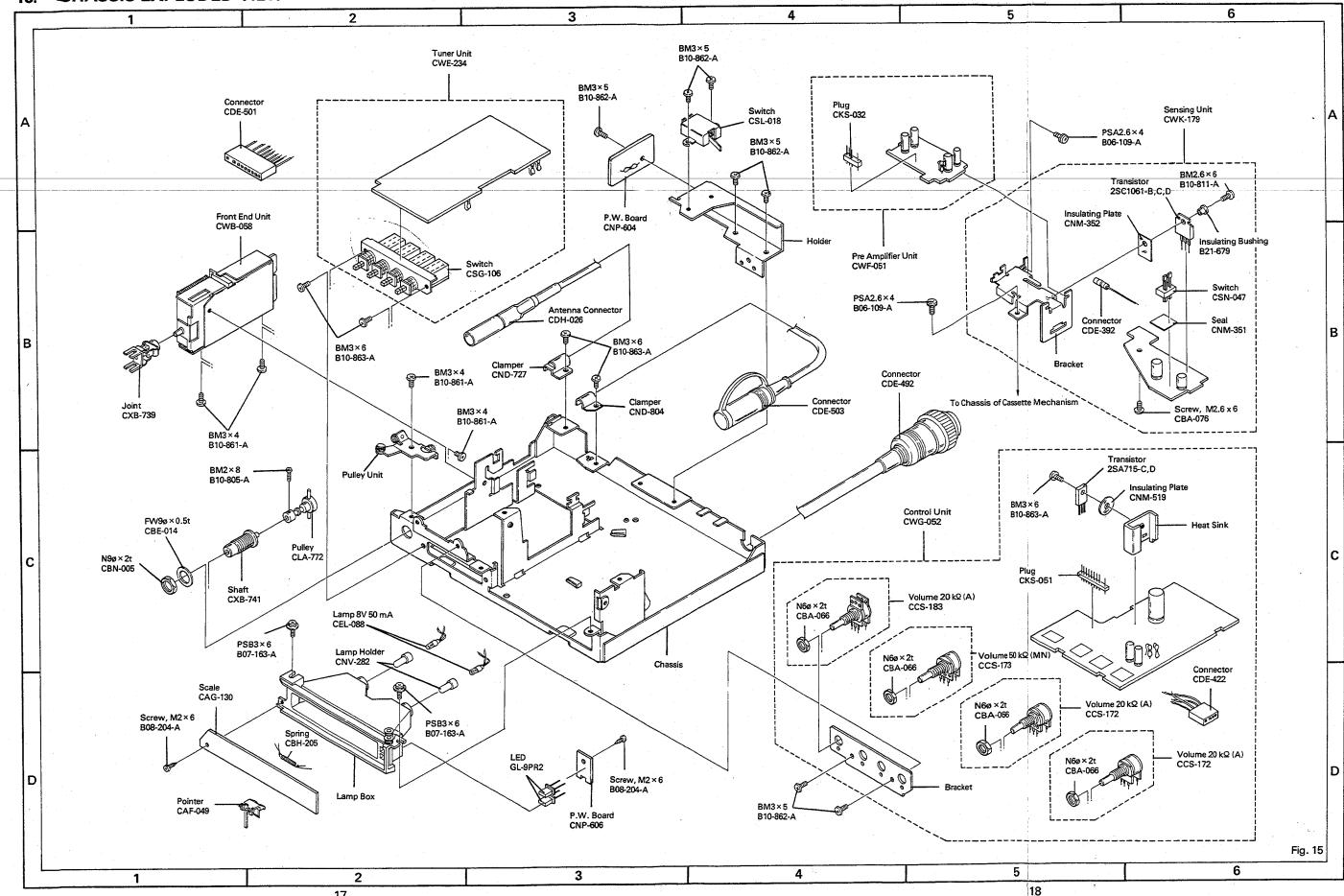
CAPACITORS

Ref. Key	Parts No.	Description	
C1,2	CQMA102K50	0.001µF	50V
C3,4	CSZA3R3M16	3.3µF	16V
C5,6	CEA220P10	22µF	. 10V
C7,8	CCDSL470K50	47pF	50∨
C9,10	CEA100P16	10μF	16V
C11,12	€QMA103K50	0.01µF	50V
C13	VACANT		
C14	CSZA220M10	22µF	10V

Ref. Key	Parts No.	Description	
D1,2	GL-9PR2	LED	
C1	CEB471P16	470µF 16∨	
\$1	CSN-055	Switch	
HD1	CPB-040	Head	
S0 -	CXP-021	Solenoid	
М	CXM-049	Motor	
IL1,2	CEL-088	Lamp 8V 50mA	
J1	CED-503	Connector	
J2	CDE-492	Connector	
ANT	CDH-026	Antenna Connector	



14. CABINET EXPLODED VIEW NOTICE: Part whose parts number is omitted is subject to being not supplied. 3 1 Screw, M3 × 6 B90-023-E Case CNB-454 Α Screw, M3×6 - 890-023-E FW3ø × 0.5t B20-003-A Screw, M3×6′ B90-023-E BM3×5 B10-862-A В ₿ Screw, M3 × 6 B90-023-E FW3ø×0.5t B20-003-A BM3×5 B10-862-A BM3×5 B10-862-A **Bottom Plate** Grille Assy CXB-762 Spring CBH-423 Button CAC-244 Nut B71-671 Holder CNE-256 С C Door CAT-066 Knob CAA-242 Spring CBH-398 Knob CAA-243 N6ø×2t CBA-066 Knob CAA-244 Button CAC-245 D D Knob CAA-245 Fig. 14 3





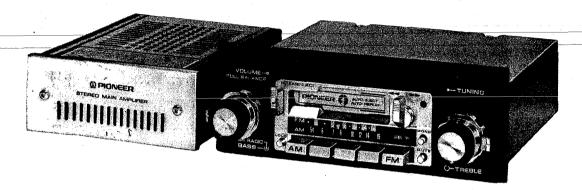
KPH-9000

U

SUPER TUNER

COMPONENT CASSETTE CAR STEREO WITH AM/FM-STEREO

SERVICE MANUAL



Subject:

This Service Manual is prepared exclusively for Main Unit. For Stereo Main Amplifier, see Service Manual GM-40.

SPECIFICATIONS

General
Power source DC13.8V (11∼16V allowable)
Grounding system Negative type
Max. current consumption4A
Dimensions (W \times H \times D) Main unit: $180 \times 50 \times 150$ mm
$(7-1/8 \times 2 \times 5-7/8 \text{ in.})$
Main amplifier: 122 × 50 × 150mm
$(4-3/4 \times 2 \times 5-7/8 \text{ in.})$
Nose size (W × H × D)
$(4-1/8 \times 1-3/4 \times 1-1/8 \text{ in.})$
Shaft interval
(5-3/4 or 6-1/4 in.)
Weight
Main amplifier: 1 kg (2.2 lbs.)
Tone controls Bass: ±10 dB (100 Hz)
Treble: ±10 dB (10 kHz)
Loudness contour+ 12 dB (100 Hz),
Lougness contour
(Volume: -30 dB) + 4 dB (10 kHz) Maximum output level More than 180 mV
Maximum output level
Output impedance800 Ω
Tape player
Tape
Tape speed
Fast forward time Within 120 sec. for C-60
Rewind time Within 120 sec. for C-60
Wow & flutter No more than 0.13% (WRMS)
Frequency response
Crosstalk More than 46 dB
Signal-to-noise ratio More than 52 dB
Signal-to-noise ratio
The second secon

١	HONS
	FM tunerFrequency range88 \sim 108 MHzUsable sensitivity12 dBf (1.1 μV/75 Ω)50 dB quieting sensitivity14.3 dBf (1.4 μV/75 Ω)Signal-to-noise ratio68 dBCapture ratio1.7 dBSelectivity74 dB (±400 kHz)Image rejection61 dBIF rejection80 dBDistortion0.8% (at 65 dBf, 400 Hz, mono)0.95% (at 65 dBf, 1 kHz, stereo)
	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
	$\begin{array}{llllllllllllllllllllllllllllllllllll$
	$ \begin{array}{llllllllllllllllllllllllllllllllllll$
	note. Specifications and the design subject to possible modification

without notice due to improvements.



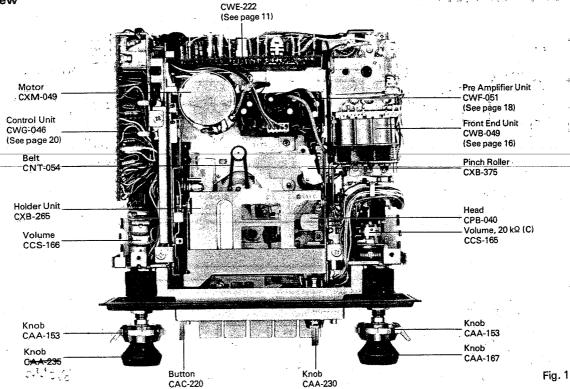


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1. PARTS LOCATION

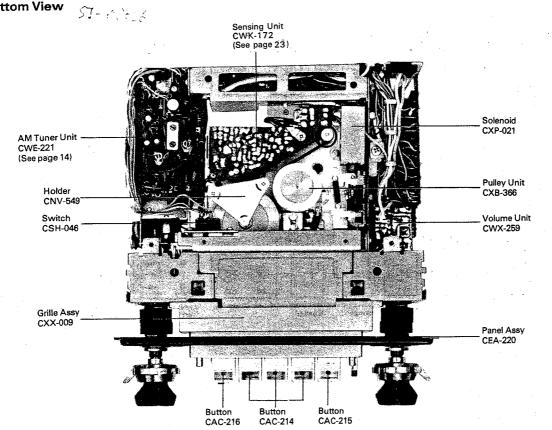
Markette Carried

Top View



IF/MPX Unit

Bottom View



2. CIRCUIT DESCRIPTION

• Circuit Block Diagram

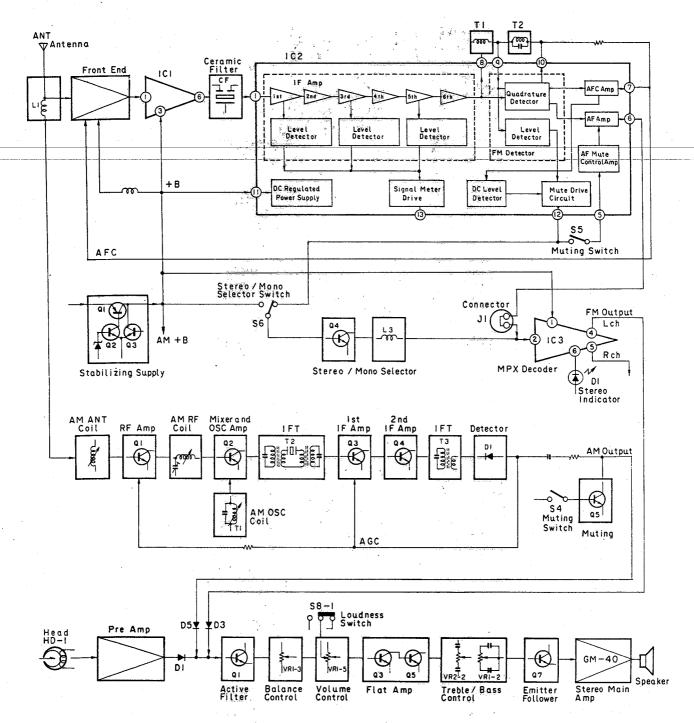


Fig. 3

Level Diagram

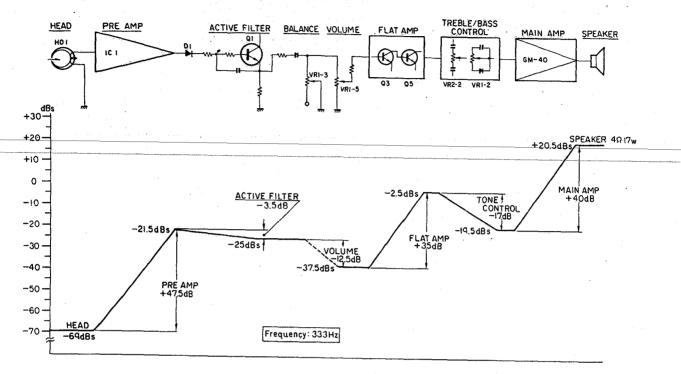
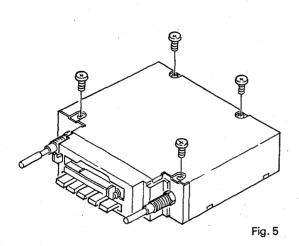
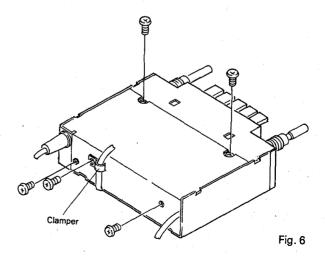


Fig. 4

• To Remove Case

- 1. Remove 4 mount screws (3 x 4mm) from upper case (see Fig. 5).
- 2. Remove 4 mount screws (3 x 4mm) from lower case (see Fig. 6).
- 3. Remove screw (3 x 5mm) from clamper (see Fig. 6).



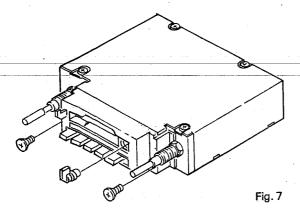


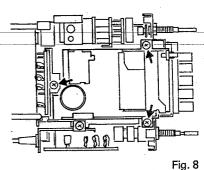
• To Remove Front Grille

- 1. Remove 2 mount screws (2.6 x 6mm) from front grille.
- 2. Withdraw knob to take out front grille (see Fig. 7).

• To Remove Cassette Mechanism

- 1. Remove upper case, lower case and front grille (see preceding items).
- 2. Remove connector from orange lead of sensing unit.
- 3. Remove connector from pre amplifier unit.
- 4. Remove 3 mount screws (3 x 5mm) from the cassette mechanism unit and take it out (see Fig. 8).

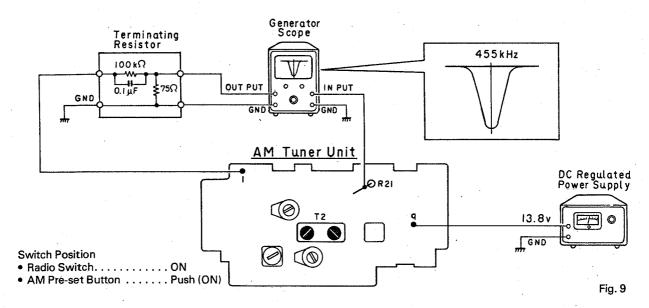




- - -

4.1 AM IF ADJUSTMENT

• Connection Diagram



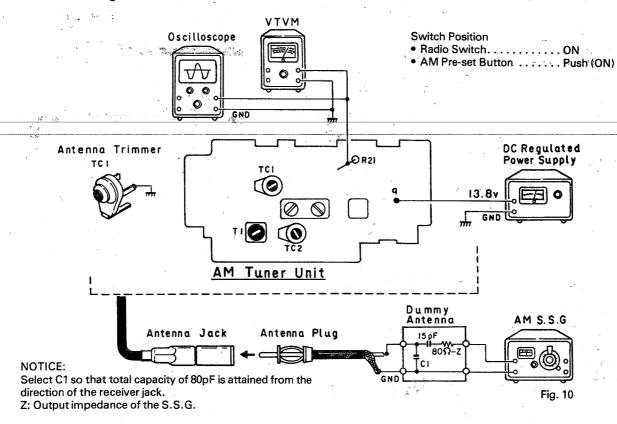
• To Adjust

1. Set Generator Scope as Follows:
Frequency centering on sweep. 455kHz
Input level 0.3Vp-p/cm
Output level 3mV∼10mV

Turn the cores (red and blue) of T2 and adjust so that U-curve will be at maximum amplitude and best symmetry.

4.2 AM TRACKING ADJUSTMENT

• Connection Diagram

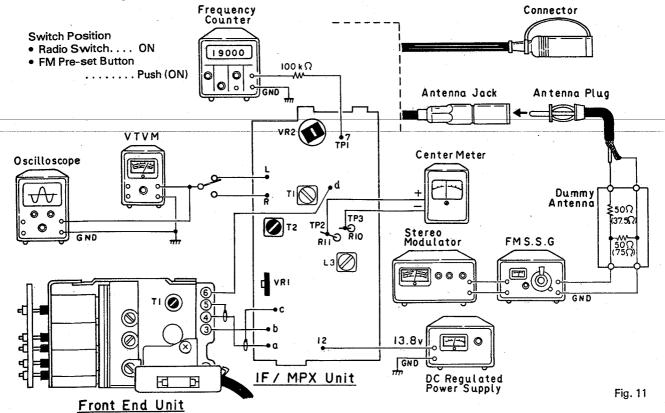


• To Adjust

SSG Frequency	Pointer Position	Adjustment Point	Note	
 515kHz (400Hz, 30% modulation), output level 20dB (μV) 	Minimum	Т1	515kHz can be received	
2. 1,650kHz (400Hz, 30% modulation), output level 20dB (μV)	Maximum	TC2	1,650kHz can be received	
 Repeat (1) and (2) alternately and adjust s 1,650kHz. 	o that broadcast can be re	ceived at the frequency b	etween 515kHz and	
4. 1,000kHz (400Hz, 30% modulation), output level 20dB (μV)	Tune to 1,000kHz	TC1, Antenna trimmer (TC1)	VTVM at maximum	

4.3 FM IF ADJUSTMENT

• Connection Diagram



• To Adjust

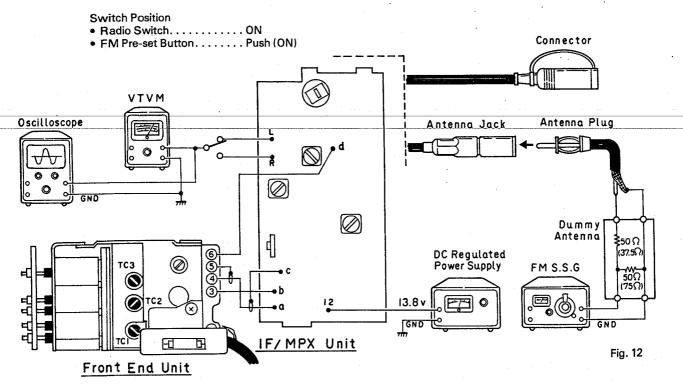
- 1. Add output signal of zero from SSG and adjust T2 (yellow color) so that the pointer of center meter (use one graduated for over $200\mu\text{A}$) will come to the center. When using an DC volt ammeter (use one graduated for over $200\mu\text{A}$), set the pointer to 0.
- Add output signal of 98 MHz 60 dB from SSG, multisignal of modulated frequency 1,000 Hz of stereo modulator and tune to 98 MHz on the dial (the pointer of the center meter is at the center).
- 3. Adjust T1 (front end unit) so that separated signal will be minimal in its distortion factor.
- Check if the distortion factor is minimal, and when the adjustment is found imperfect, adjust T2 (yellow color).

NOTE:

When adjusting, do not move T1 and L3.

4.4 FM TRACKING ADJUSTMENT

• Connection Diagram



• To Adjust

SSG Frequency	Pointer Position	Adjustment Point	Note	
1. 87.5 MHz (400Hz, 100% modulation), output level 8dB (μ V)	Minimum	тсз	87.5MHz can be received	
2. 108.5MHz (400Hz, 100% modulation), output level 8dB (μV)	Maximum		Check if 108.5 MHz can be received	
3. 98 MHz (400Hz, 100% modulation), output level 5dB (μ V)	Tuned position	TC1, TC2	Maximum output	

4.5 FM MPX ADJUSTMENT

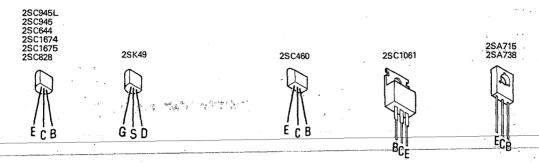
• Connection Diagram

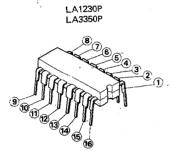
Connect as shown in Fig. 11. Set the position of the switch as well.

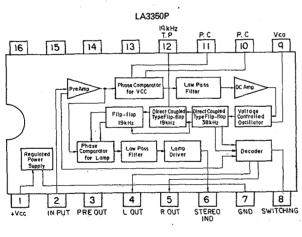
• To Adjust

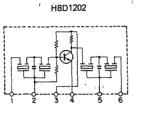
- Add unmodulated signal of 60 dB from SSG and adjust VR2 so that the frequency counter will indicate 19 kHz±20Hz.
- 2. Set MONO switch to OFF (STEREO) position.
- 3. Set SSG to 98MHz, output level to 60dB (μ V) and modulation frequency to 1kHz.
- Set stereo modulator output to pilot modulation level of 7.5kHz (deviation) and main modulation level (L + R) of 67.5kHz (deviation).
- 5. Turn the tuning knob to 98MHz.
- Adjust the separation adjustment VR1 so that crosstalk of the opposite channel is reduced to minimum (Rch/Lch).

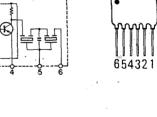
• IC's and Transistors

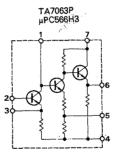


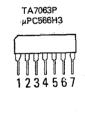




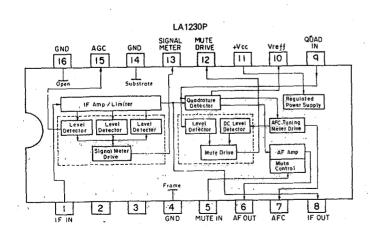


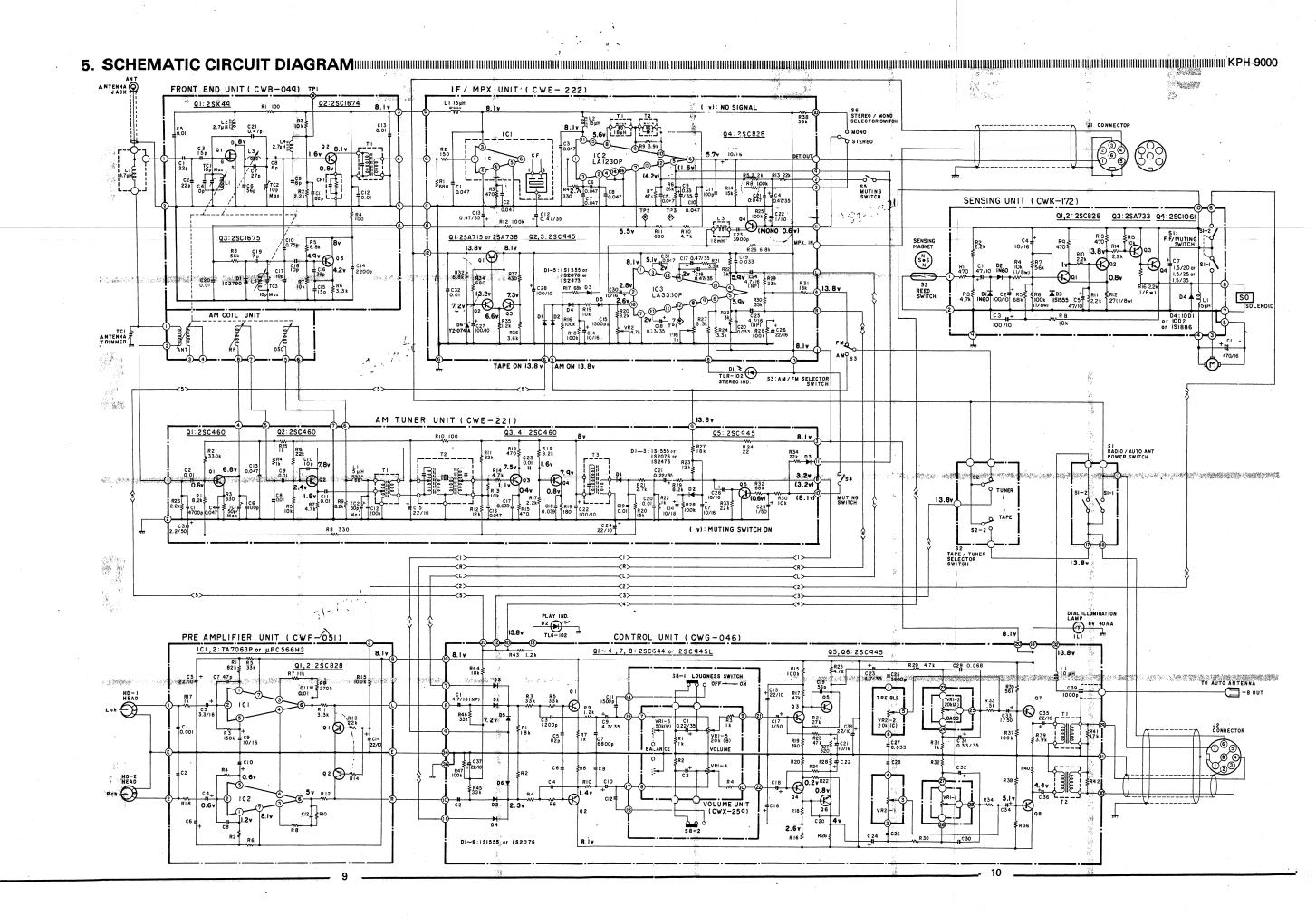


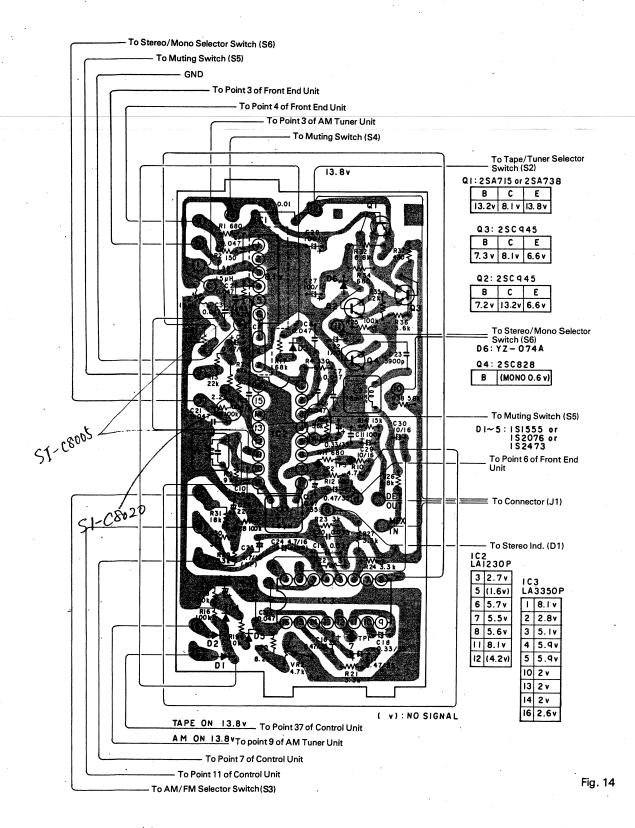




H8D1202







NOTICE: Of the descriptive symbols of the resistor and capacitor, the encircled alphabetic letter denotes the allowable error.

Example: RD1/4VS100 ① C:±0.25pF

F:±1pF J:±5% M:±20%

• Parts List
MISCELLANEOUS

CEA100 P 25 D:±0.5pF

G:±2% K:±10% X: +40%

P: + 100 %

MISCELL	ANEUUS					· . -	-20 —	10	
Ref. Key	Parts No.	Description	ı		Ref. Key	Parts No.	Description)	
IC1	CWW-014	IC and Cerar	nic Filter	, Black		1S2473	Diode		
	CWW-014	IC and Cerar	nic Filter	, Blue	D4	1S1555 or	Diode		
	CWW-014	IC and Cerar	nic Filter	, Red		1S2076 or	Diode		
	CWW-014	ICand Cerar	nic Filter,	, Orange		1S2473	Diode		
	CWW-014	IC and Cerar	nic Filter	, White	D5	1S1555 or	Diode		
	CWW-015	IC and Cerar	nic Filter	, Green		1S2076 or	Diode		
	CWW-015	IC and Cerar	nic Filter	, Black		1S2473	Diode		
	CWW-015	IC and Cerar	nic Filter	, Red	D6	YZ-074A	Diode		
	CWW-015	IC and Cerar	nic Filter	, White	L1	CTF-016 or	Ferri-Induct	or, 15µH	
,	CWW-015	IC and Cerar	nic Filter	, Yellow		CTF-078	Ferri-Induct	or, 15μΗ	
IC2	LA1230P	IC			L2	CTF-016 or	Ferri-Induct	or, 15µH	
IC3	LA3350P	IC			•	CTF-078	Ferri-Induct	or, 15μΗ	
Q1	2SA715-C,D or	Transistor			L3	CTC-057 or	Coil, 18mH		
	2SA738-C,D	Transistor				CTC-058	Coil, 18mH		
02	2SC945-K,P,Q	Transistor			T1	CTC-090	Coil, 18µH		
Q3	2SC945-K,P,Q	Transistor			T2	CTC-091	Coil		
Q4	2SC828-Q,R	Transistor			VR1	CCP-033	Volume, 1kg	5.	
D1	1S1555 or	Diode		*	VR2	C92-618	Volume, 4.7	kΩ (B)	
	1S2076 or	Diode		•					
	1S2473	Diode							
D2	1S1555 or	Diode							
	1S2076 or	Diode							
	1S2473	Diode							
D3	1S1555 or	Diode							
	1S2076 or	Diode			-			***************************************	
RESISTO	RS	SI- C.	o!		· .				
Ref. Key	Parts No.	Description			Ref. Key	Parts No.	Description		,
R1	RD1/8VS681J	Resistor	680Ω	1/8W	R11	RD1/4PS681J	Resistor	680Ω	1/4W
R2	RD1/8VS151J	Resistor	150Ω	1/8W	R12	RD1/8VS104J	Resistor	100kΩ	1/8W
R3	RD1/8VS 4 ∰J	Resistor	4₹ 0Ω	1/8W	R13	RD1/8VS223J	Resistor	22kΩ	1/8W
R4	RD1/8VS331J	Resistor	33̈́ΟΩ	1/8W	R14	RD1/8VS153J	Resistor	15kΩ	1/8W
R5	RD1/8VS222J	Resistor	2.2 kΩ	1/8W	R15	VACANT			
R6	RD1/8VS563J	Resistor	56k Ω	1/8W) De	R16	RD1/8VS104J	Resistor	100kΩ	1/8W
R7	RD1/8VS473J	Resistor	47kΩ	1/8W	R17		Resistor	100kΩ 68kΩ	1/8W
	70 70 70 70 70 70 70 70 70 70 70 70 70 7	110000101	7/ 1/26	1/000	NI/	RD1/8VS683J	nesistor	OOK2	1/000

Resistor

Resistor () 1860 kΩ

 $3.9k\Omega$

4.7kΩ 1/4W

RD1/8VS1944 RD1/8VS392J

RD1/4PS472J

R8

R9

R10

R18

R19

R20

RD1/8VS104J

RD1/8VS103J

RD1/8VS822J

100kΩ

10kΩ

8.2kΩ 1/8W

Resistor

Resistor

Resistor

1/8W

1/8W

1/8W

1/8W

Ref. Key	Parts No.	Description				Ref. Key	Parts No.	Description		, y .
R21	RD1/8VS332J	Resistor	3.3kΩ	1/8W		R31	RD1/8VS183J	Resistor	18kΩ	1/8W
R22	RD1/8VS302J	Resistor	3k Ω	1/8W		R32	RD1/8VS682J	Resistor	6.8kΩ	1/8W
R23	RD1/8VS302J	Resistor	3kΩ	1/8W		R33	VACANT		O.ORGE	1,011
R24	RD1/8VS332J	Resistor	3.3kΩ	1/8W		R34	RD1/8VS681J	Resistor	680Ω	1/8W
R25	RD1/8VS104J	Resistor	100kΩ	1/8W		R35	RD1/8VS122J	Resistor	1.2kΩ	1/8W
R26	RD1/8VS682J	Resistor	6.8kΩ	1/8W	•	R36	RD1/4VS362J	Resistor	3.6kΩ	1/4W
R27	RD1/8VS332J	Resistor	3.3kΩ	1/8W		R37	RD1/4VS431J	Resistor	430Ω	1/4W
R28	RD1/8VS104J	Resistor	100kΩ	1/8W		R38	RD1/8VS563J	Resistor	56kΩ	1/8W
R29	RD1/8VS333J	Resistor	33 kΩ	1/8W	added	* -				
R30	RD1/8VS333J	Resistor	33kΩ	1/8W	0.23.74	R 33	RD1/8PS333J	1	33k-O	

Ref. Key	Parts No.	Description	1		_	Ref. Key	Parts No.	Description	1	
C1	CKDYF473Z25	Capacitor	0.047μF	25V		C21	CKDYF473Z25	Capacitor	0.047μF	25V
C2	CKDYF473Z25	Capacitor	$0.047 \mu F$	25V		C22	CSZA010M10	Capacitor	1μF	10V
C3	CKDYF473Z25	Capacitor	$0.047 \mu F$	25V		C23	CQSA392J50	Capacitor	3900pF	50V
C4	CSZAR47M35	Capacitor	$0.47 \mu F$	35V		C24	CEA4R7M16NP	Capacitor	4.7μF	16V
C5	CKDYF473Z25	Capacitor	0.047μF	25V		C25	CEA4R7M16NP	Capacitor	4.7μF	16V
C6	CKDYF473Z25	Capacitor	0.047μF	25V		C26	CEA220P16	Capacitor	22μF	16V
C7	CKDYF473Z25	Capacitor	$0.047 \mu F$	25V		C27	CEA101P10	Capacitor	100μF	10V
C8	CKDYF473Z25	Capacitor	$0.047 \mu F$	25V		C28	CEA101P10	Capacitor	100μF	10V
C9	CSZAR33M35	Capacitor	$0.33 \mu F$	35V		C29	CEA100P16	Capacitor	10μF	16V
C10	CKDYF473Z25	Capacitor	0.047μF	25V		C30	CEA100P16	Capacitor	10μF	16V
C11	CKDYB101K50	Capacitor	100pF	50V		C31	CQMA473K50	Capacitor	0.047μF	50V
C12	CSZAR47M35	Capacitor	0.47μ F	35V		C32	CCG-019	Capacitor	0.01μF	50V
C13	CSZAR47M35	Capacitor	$0.47 \mu F$	35V	adde	k		•		
C14	CEA100P16	Capacitor	10μF	16V		C33	CEA 100P16	11	10 MF	16 V
C15	COSA152J50	Capacitor	1500pF	50V	•		7 / 2		,	
C16	CSZAR47M35	Capacitor	0.47μF	35V						
C17	CSZAR47M35	Capacitor	0.47μ F	35V		*				
C18	CSZAR33M35	Capacitor	0.33μF	35V						
C19	CQMA333K50	Capacitor	$0.033 \mu F$	50V		•				
C20	CQMA333K50	Capacitor	$0.033 \mu F$	50V						

7. AM TUNER UNIT (CWE-221)

• Parts Connection

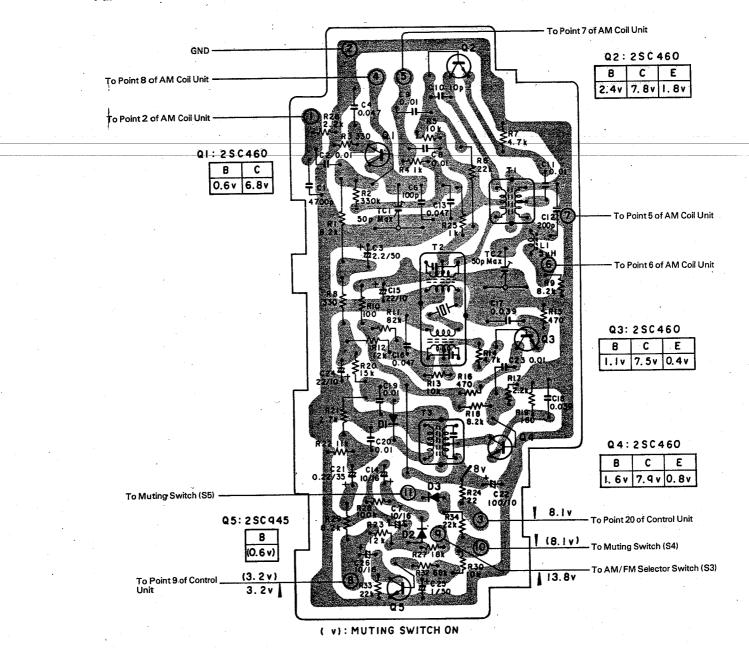


Fig. 15

• Parts List

MISCELLANEOUS

Ref. Key	Parts No.	Description	Ref. Key	Parts No.	Description
Q1	2SC460-A	Transistor	. —————	1S2473	Diode
02	2SC460-B	Transistor	D3	1S1555 or	Diode
C3	2SC460-A	Transistor		1S2076 or	Diode
Q4	2SC460-A	Transistor		1S2473	Diode
Q5 25	2SC945-K,P	Transistor	T1	CTE-002	Coil
D1	1S1555 or	Diode	T2	CTE-037	IF Transformer
	1S2076 or	Diode	Т3	CTE-038	IF Transformer
	1S2473	Diode	L1	CTF-005	Ferri-Inductor, 5µH
D2	1S1555 or	Diode	TC1	C43-610	Ceramic Trimmer, 50pF
	1S2076 or	Diode	TC2	C43-610	Ceramic Trimmer, 50pF

RESISTORS

Ref. Key	Parts No.	Description	on .	
R1	RD1/4PS822J	Resistor	8.2kΩ	1/4W
R2	RD1/8VS334J	Resistor	330kΩ	1/8W
R3	RD1/8VS331J	Resistor	∙ 330Ω	1/8W
R4	RD1/8VS102J	Resistor	1kΩ	1/8W
R5	RD1/8VS103J	Resistor	10kΩ	1/8W
R6	RD1/4PS223J	Resistor	22 kΩ	1/4W
R7	RD1/8VS472J	Resistor	4.7kΩ	1/8W
R8	RD1/8VS331J	Resistor	330Ω	1/8W
R9	RD1/8VS822J	Resistor	8.2kΩ	1/8W
R10	RD1/8VS101J	Resistor	100Ω	1/8W
R11 ,	RD1/8VS823J	Resistor	82kΩ	1/8W
R12	RD1/8VS123J	Resistor	12kΩ	1/8W
R13	RD1/8VS103J	Resistor	10kΩ	1/8W
R14	RD1/8VS472J	Resistor	4.7kΩ	1/8W
R15	RD1/8VS471J	Resistor	470Ω	1/8W
R16	RD1/8V\$471J	Resistor	470Ω	1/8W
R17	RD1/8VS222J	Resistor	2.2kΩ	1/8W
R18	RD1/8VS822J	Resistor	8.2kΩ	1/8W
R19	RD1/8VS181J	Resistor	180Ω	1/8W
R20	RD1/8VS153J	Resistor	15kΩ	1/8W

Ref. Key	Parts No.	Description	1	
R21	RD1/4PS272J	Resistor	2.7kΩ	1/4W
R22	RD1/4VS113J	Resistor	11kΩ	1/4W
R23	RD1/8VS123J	Resistor	12kΩ	1/8W
R24	RD1/8VS220J	Resistor	22Ω	1/8W
R25	RD1/8VS102J	Resistor	1kΩ	1/8W
R26	RD1/8VS222J	Resistor	2.2kΩ	1/8W
R27	RD1/8VS183J	Resistor	18kΩ	1/8W
R28	RD1/8VS104J	Resistor	100kΩ	1/8W
R29	RD1/8VS822J	Resistor	8.2kΩ	1/8W
30	RD1/8VS103J	Resistor	10kΩ	1/8W
R31	VACANT			
R32	RD1/8VS683J	Resistor	68 kΩ	1/8W
33	RD1/8VS223J	Resistor	22kΩ	1/8W
34	RD1/8VS223J	Resistor	22kΩ	1/8W

Ref. Key	Parts No.	Description					
C1	CQMA472J50	Capacitor	4700pF	50V			
C2	CCG-019	Capacitor	0.01µF	50V			
C3	CEA2R2P50	Capacitor	2.2µF	50V			
C4	CKDYF473Z25	Capacitor	0.047μF	25V			
C5	VACANT						

Ref. Key	Parts No.	Description				
C6	CCDSL101K50	Capacitor	100pF	50V		
C7	CEA100P16	Capacitor	10μF	16V		
C8	CQMA103J50	Capacitor	0.01µF	50V		
C9	CCG-019	Capacitor	0.01μF	50V		
C10	CCDSL100F50	Capacitor	10pF	50V		

Ref. Key	Parts No.	Description			Ref. Key	Parts No.	Description	1	*
 C11	CCG-019	Capacitor	0.01μF	50V	C21	CSZAR22M35	Capacitor	0.22μF	35V
C12	CCDSH201K50	Capacitor	200pF	50V	C22	CEA101P10	Capacitor	100μF	10V
C12	CKDYF473Z25	Capacitor	0.047µF	25V	C23	CCG-019	Capacitor	0.01μF	50V
C13	CEA100P16	Capacitor	10μF	16V	C24	CEA220P10	Capacitor	22μF	10V
C15	CEA220P10	Capacitor	22 μF	10V	C25	CEA010P50	Capacitor	1μF	50V
C16	CKDYF473Z25	Capacitor	0.047μF	25V	C26	CEA100P16	Capacitor	10μF	16V
C17	CQMA393M50	Capacitor	.0.039µF	50V .					
C18	CQMA393M50	Capacitor	0.039μF	50V					
C19	CQMA103K50	Capacitor	0.01µF	50V					
C20	CQMA103K50	Capacitor	0.01μF	50V					

8. FRONT END UNIT (CWB-049)

Parts Connection

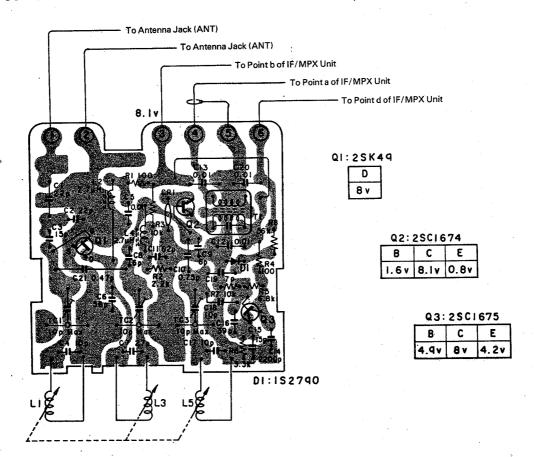


Fig. 16

• Parts List

MISCELLANEOUS

Ref. Key	Parts No.	Description	Ref. Key	Parts No.	Description
Q1	2SK49-H2	FET .	TC3	CCG-008	Ceramic Trimmer, 10pF
02	2SC1674-L,K	Transistor	CR1	CCX-001	Multiple Components
O3	2SC1675-M	Transistor			
D1	1S2790	Diode			
L2	CTF-039 or	Ferri-Inductor, 2.7μH			<u>.</u>
,	CTF-065	Ferri-Inductor, 2.7µH		•	
L4	CTF-039	Ferri-Inductor, 2.7µH			
T1	CTC-043	IF Transformer			
TC1	CCG-008	Ceramic Trimmer, 10pF			
TC2	CCG-008	Ceramic Trimmer, 10pF			

RESISTORS

Ref. Key	Parts No.	Description		
R1	RD1/8VS101J	Resistor	100Ω	1/8W
R2	RD1/8VS222J	Resistor	2.2kΩ	1/8W
R3	RD1/8VS103J	Resistor	10kΩ	1/8W
R4	RD1/8VS101J	Resistor	100Ω	1/8W
R5	RD1/10PS682J	Resistor	6.8kΩ	1/10W

Ref. Key	Parts No.	Description		
R6	RD1/10PS332J	Resistor	3.3kΩ	1/10W
R7	RD1/10PS103J	Resistor	10kΩ	1/10W
R8	RD1/8VS563J	Resistor	56kΩ	1/8W

Ref. Key	Parts No.	Description		
C1	CCDSL220K500	Capacitor	22pF	500V
C2	CCDSL220J50	Capacitor	22pF	50V
C3	CCDSL150J50	Capacitor	15pF	50V
C4	CCDRH100F50	Capacitor	10pF	50V
C5	CKDYF103Z25	Capacitor	0.01μF	25V
C6	CCDSL560J50	Capacitor	56pF	50V
C7	CCDRH270J50	Capacitor	27pF	50V
C8	CCDCH060D50	Capacitor	6pF	50V
C9	CCDCH060D50	Capacitor	6pF	50V
C10	CGBR75K500	Capacitor	0.75pF	500V

Ref. Key	Parts No.	Description				
C11	CCDSL820J50	Capacitor	82pF	50V		
C12	CKDYD103M50	Capacitor	0.01μF	50V		
C13	CKDYF103Z25	Capacitor	0.01μF	25V		
C14	CKDYB222K50	Capacitor	2200pF	50V		
C15	CCDTH150J50	Capacitor	15pF	50V		
C16	CCDTH390J50	Capacitor	39pF	50∨		
C17	CCDTH100F50	Capacitor	10pF	50V		
C18	CCDTH100F50	Capacitor	10pF	50V		
C19	CCDCH070D50	Capacitor	7pF	50V		
C20	CKDYF103Z25	Capacitor	0.01μF	25V		
C21	CGBR47K500	Capacitor	0.47pF	500V		

9. PRE AMPLIFIER UNIT (CWF-051)

• Parts Connection

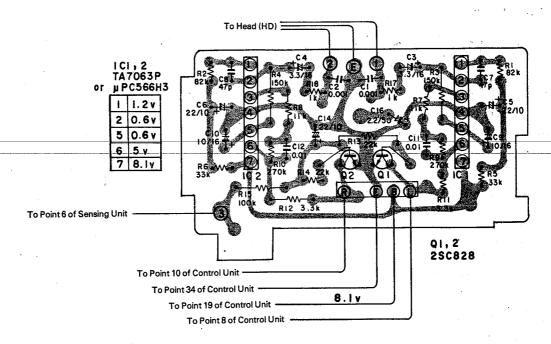


Fig. 17

• Parts List

MISCELLANEOUS

Ref. Key	Parts No.	Description		Ref. Key	Parts No.	Description	
IC1	TA7063P-C,D,E	IC		.02	2SC828-Q,R	Transistor	
	μPC566H3-L,M,N	IC					
IC2	TA7063P-C,D,E, µPC566H3-L,M,N						
Q1	2SC828-Q,R	Transistor-	SI - C80	36			

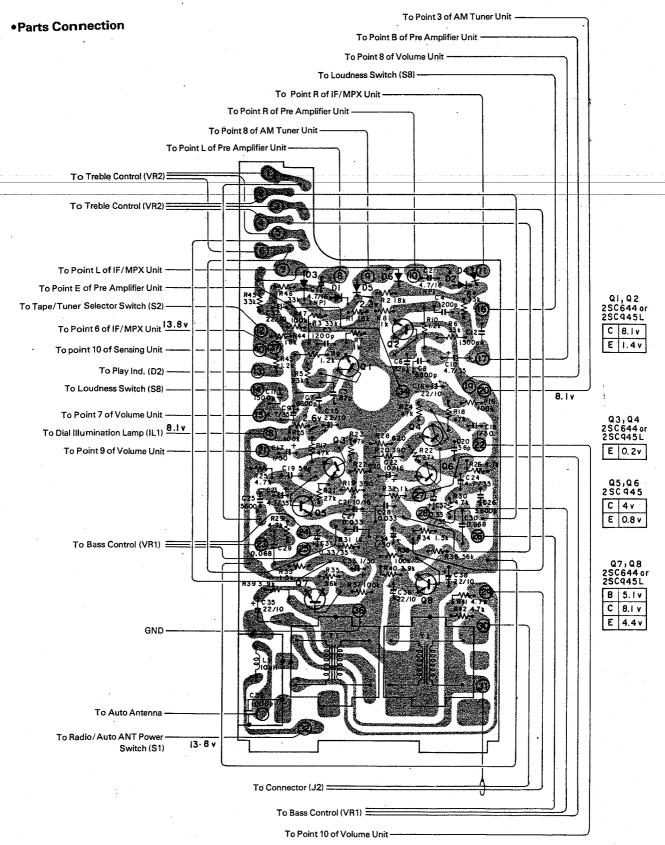
250 1740LN 27 25073274-94

RESISTORS.

Ref. Key	Parts No.	Description	øt		Ref. Key	Parts No.	Description	1	
R1	RD1/4VS823J	Resistor	82 kΩ	1/4W	R11	RD1/4VS332J	Resistor	3.3kΩ	1/4W
R2	RD1/4VS823J	Resistor	82 kΩ	1/4W	R12	RD1/4VS332J	Resistor	$3.3k\Omega$	1/4W
R3	RD1/4VS154J	Resistor	150kΩ	1/4W	R13	RD1/4VS223J	Resistor	22 kΩ	1/4W
R4	RD1/4VS154J	Resistor	150kΩ	1/4W	R14	RD1/4VS223J	Resistor	22kΩ	1/4W
R5	RD1/4VS333J	Resistor	33 kΩ	1/4W	R15	RD1/4VS104J	Resistor	100kΩ	1/4W
R6	RD1/4VS333J	Resistor	33 kΩ	1/4W	R16	VACANT			
-R7	RD1/4VS113J	Resistor	11kΩ	1/4W	R17	RD1/4VS102J	Resistor	-1kΩ	1/4W
R8	RD1/4VS113J	Resistor	11kΩ	1/4W	R18	RD1/4VS102J	Resistor	1kΩ	1/4W
R9	RD1/4VS274J	Resistor	270kΩ	1/4W					
R10	RD1/4VS274J	Resistor	270kΩ	1/4W	•				

Ref. Key	Parts No.	Description			Ref. Key	Parts No.	Description	n	
C1	COMA102K50	Capacitor	0.001μF	50V	C11	CQMA103K50	Capacitor	0.01μF	50V
C2	CQMA102K50	Capacitor	0.001μF	50V	C12	CQMA103K50	Capacitor	0.01µF	50V
C3	CSZA3R3M16	Capacitor	3.3µF	16V	C13	VACANT		<u> </u>	
C4	CSZA3R3M16	Capacitor	3.3µF	16V	C14	CSZA220M10	Capacitor	22µF	10V
C5	CEA220P10	Capacitor	22μ F	10V				•	
C6	CEA220P10	Capacitor	22 μF	10V	•				
C7	CCDSL470K50	Capacitor	47pF	50V					
C8	CCDSL470K50	Capacitor	47pF	50V	•				
C9	CEA100P16	Capacitor	10μF	16V					
C10	CEA100P16	Capacitor	10μF	16V					

10. CONTROL UNIT (CWG-046)



• Parts List MISCELLANEOUS

Ref. Key	Parts No.	Description	Ref. Key	Parts No.	Description
Q1	2SC644-R,S or	Transistor	D3	1S1555 or	Diode
	2SC945L-K,P,Q	Transistor	•	1S2076	Diode
02	2SC644-R,S or	Transistor	D4	1S1555 or	Diode
	2SC945L-K,P,Q	Transistor		1S2076	Diode
Q3	2SC644-R,S or	Transistor	D5	1S1555 or-	Diode
••••	2SC945L-K,P,Q	Transistor		1S2076	Diode
Q4	2SC644-R,S or	Transistor	D6	1S1555 or	Diode
	2SC945L-K,P,Q	Transistor		1S2076	Diode
Q5	2SC828-Q,R,S or	Transistor	L1	CTH-035	Coil, 10μH
	2SC945-K,P,Q	Transistor	T1	CTH-040	Transformer
Q6	2SC828-Q,R,S or	Transistor	T2	CTH-040	Transformer
	2SC945-K,P,Q	Transistor			•
Q7	2SC644-R,S or	Transistor			
	2SC945L-K,P,Q	Transistór			
08	2SC644-R,S or	Transistor			
	2SC945L-K,P,Q	Transistor			
D1 .	1S1555 or	Diode			
	1S2076	Diode			
D2	1S1555 or	Diode	•	_	•
	1S2076	Diode			

RESISTORS

Ref. Key	Parts No.	Description			Ref. Key	Parts No.	Description	1.	
R1	RD1/4VS183J	Resistor	18kΩ	1/4W	R21	RD1/4VS273J	Resistor	27 kΩ	1/4W
R2	RD1/4VS183J	Resistor	18kΩ	1/4W	R22	RD1/4VS273J	Resistor	27 kΩ	1/4W
R3	RD1/4VS333J	Resistor	33 kΩ	1/4W	R23	RD1/4VS473J	Resistor	. 47kΩ	1/4W
R4	RD1/4VS333J	Resistor	33 kΩ	1/4W	R24	RD1/4VS473J	Resistor	47k Ω	1/4W
R5	RD1/4VS333J	Resistor	33k Ω	1/4W	R25	RD1/4VS472J	Resistor	4.7kΩ	1/4W
R6	RD1/4VS333J	Resistor	33 kΩ	1/4W	R26	RD1/4VS472J	Resistor	4.7kΩ	1/4W
R7	RD1/4VS102J	Resistor	1kΩ	1/4W	R27	RD1/4VS621J	Resistor	620Ω	1/4W
R8	RD1/4VS102J	Resistor	1kΩ	1/4W	R28	RD1/4VS621J	Resistor	1kΩ	1/4W
R9	RD1/4VS122J	Resistor	1.2kΩ	1/4W	R29	RD1/4VS472J	Resistor	4.7kΩ	1/4W
R10	RD1/4VS122J	Resistor	1.2kΩ	1/4W	R30	RD1/4VS472J	Resistor	4.7kΩ	1/4W
R11	VACANT				R31	RD1/4VS102J	Resistor	1kΩ	1/4W
R12	VACANT				R32	RD1/4VS102J	Resistor	1kΩ	1/4W
R13	VACANT				R33	RD1/4VS152J	Resistor	1.5kΩ	1/4W
R14	VACANT				R34	RD1/4VS152J	Resistor	1.5kΩ	1/4W
R15	RD1/4VS104J	Resistor	100kΩ	1/4W	R35	RD1/4VS563J	Resistor	56k Ω	1/4W
R16	RD1/4VS104J	Resistor	100kΩ	1/4W	R36	RD1/4VS563J	Resistor	56kΩ	1/4W
R17	RD1/4VS473J	Resistor	47kΩ	1/4W	R37	RD1/4VS104J	Resistor	100kΩ	1/4W
R18	RD1/4VS473J	Resistor	47kΩ	1/4W	R38	RD1/4VS104J	Resistor	100kΩ	1/4W
R19	RD1/4VS391J	Resistor	390Ω	1/4W	R39	RD1/4VS392J	Resistor	3.9kΩ	1/4W
R20	RD1/4VS391J	Resistor	390 Ω	1/4W	R40	RD1/4VS392J	Resistor	3.9 kΩ	1/4W

Ref. Key	Parts No.	Description	n		Ref. Key	Parts No.	Description		
R41	RD1/4VS472J	Resistor	4.7kΩ	1/4W	R46	RD1/4VS333J	Resistor	3 3kΩ	1/4W
R42	RD1/4VS472J	Resistor	4.7kΩ	1/4W	R47	RD1/4VS104J	Resistor	100kΩ	1/4W
R43	RD1/4VS122J	Resistor	1.2kΩ	1/4W					
R44	RD1/4VS183J	Resistor	18kΩ	1/4W		•			
R45	RD1/4VS333J	Resistor	- 33kΩ	1/4W					

CAPACITORS

Ref. Key	Parts No.	Description			Ref. Key	Parts No.	Description		
C1	CEA4R7M16NP	Capacitor	4.7μF	16V	C21	CEA100P16	Capacitor	10μF	16V
C2	CEA4R7M16NP	Capacitor	4.7μF	16V	C22	CEA100P16	Capacitor	10μF	16V
C3	CQMA122K50	Capacitor	1200pF	50V	C23	CEA4R7P35	Capacitor	4.7μF	35V
C4	COMA122K50	Capacitor	1200pF	50V	C24	CEA4R7P35	Capacitor	4.7μF	35V
C5	CCDSL820J50	Capacitor	82pF	50V	C25	CQMA562M50	Capacitor	5600pF	50V
C6	CCDSL820J50	Capacitor	82pF	50V	C26	CQMA562M50	Capacitor	5600pF	50V
C7	CQMA682K50	Capacitor	6800pF	50V	C27	CQMA333M50	Capacitor	$0.033 \mu F$	50V
C8	CQMA682K50	Capacitor	6800pF	50V	C28	CQMA333M50	Capacitor	$0.033 \mu F$	50V
C9	CEA4R7P35	Capacitor	4.7μF	3 5V	C29	CQMA683M50	Capacitor	0.068µF	50V
C10	CEA4R7P35	Capacitor	4.7μF	35V	C30	CQMA683M50	Capacitor	0.068µF	50V
C11	CQMA152M50	Capacitor	1500pF	50V	C31	CSZAR33M35	Capacitor	0.33μF	35V
C12	CQMA152M50	Capacitor	1500pF	50V	C32	CSZAR33M35	Capacitor	$0.33 \mu F$	35V
C13	VACANT				C33	CEA010P50	Capacitor	1μF	50V
C14	VACANT				C34	CEA010P50	Capacitor	1μF	50V
C15	CEA220P10	Capacitor	22 μ F	10V	C35	CEA220P10	Capacitor	22μF	10V
C16	CEA220P10	Capacitor	22μF	10V	C36	CEA220P10	Capacitor	22μF	10V
C17	CEA010P50	Capacitor	1μF	50V	C37	CEA220P10	Capacitor	22μF	10V
C18	CEA010P50	Capacitor	1μF	50V ·	C38	CEA220P10	Capacitor	22μF	10V
C19	CCDSL560J50	Capacitor	56pF	50V	C39	CCL-067	Feed through Cap.	1000pF	
C20	CCDSL560J50	Capacitor	56pF	50V			anoughcap.		

1.5kΩ 1/4W 150kΩ 1/4W 150kΩ 1/4W 220kΩ 1/4W 220kΩ 1/4W

3.9kΩ 1/4W 3.9kΩ 1/4W

1/4W

1/4W 330Ω 1/4W

22kΩ

22kΩ

• Parts List

MISCELLANEOUS

Ref. Key	Parts No.	Parts No. Description Ref. Key		Parts No.	Description			
Q1	2SC945-Q, P,K or	Transistor	Q6	2SC945-Q,P,K or	Transistor			
	2SC828-Q, R,S	Transistor *		2SC828-Q,R,S	Transistor			
Q2 2SC945-Q,P,K or 2SC828-Q,R,S	2SC945-Q, P, K or	Transistor	VR1	CCS-157	Volume, 50kΩ (MN)			
	Transistor	VR2	CCS-156	Volume, 20kΩ (A)				
O 3		Transistor	VR3	CCS-156	Volume, 20kΩ (A)			
	2SC828-Q, R,S	Transistor	IL1	CEL-063	Lamp, 14V 60mA			
Q4	2SC945-Q, P,K or	Transistor	IL2	CEL-063	Lamp, 14V 60mA			
	2SC828-Q, R,S	Transistor						
Q5	2SC945-Q, P,K or	Transistor						
	2SC828-Q, R,S	Transistor						

RESISTORS

Ref. Key	Parts No.	Description	on		Ref. Key	Parts No.	Description
R1	RD1/4VS224J	Resistor	220 kΩ	1/4W	R16	RD1/4VS152J	Resistor
R2	RD1/4VS224J	Resistor	220kΩ	1/4W	R17	RD1/4VS154J	Resistor
R3	RD1/4VS823J	Resistor	82 kΩ	1/4W	R18	RD1/4VS154J	Resistor
R4	RD1/4VS823J	Resistor	82 kΩ	1/4W	R19	RD1/4VS224J	Resistor
R5	RD1/4VS472J	Resistor	4.7 kΩ	1/4W	R20	RD1/4VS224J	Resistor
R6	RD1/4VS472J	Resistor	4.7kΩ	1/4W	R21	RD1/4VS392J	Resistor
R7	RD1/4VS272J	Resistor	$2.7k\Omega$	1/4W	R22	RD1/4VS392J	Resistor
R8	RD1/4VS272J	Resistor	2.7kΩ	1/4W	R23	RD1/4VS223J	Resistor
R9	RD1/4VS272J	Resistor	2.7kΩ	1/4W	R24	RD1/4VS223J	Resistor
Ř10	RD1/4VS272J	Resistor	2.7kΩ	1/4W	R25	RD1/4VS331J	Resistor
R11	RD1/4VS472J	Resistor	4.7kΩ	1/4W			,
R12	RD1/4VS472J	Resistor	4.7kΩ	1/4W			
R13	RD1/4VS102J	Resistor	1kΩ	1/4W			
R14	RD1/4VS102J	Resistor	1kΩ	1/4W			
R15	RD1/4VS152J	Resistor	$1.5 k\Omega$	1/4W			

CAPACITORS

Ref. Key	Parts No.	Description		
C1	CEA010P50	Capacitor	1μF	50V
C2	CEA010P50	Capacitor	1μF	50V
C3	CEA010P50	Capacitor	1μF	50V
C4	CEA010P50	Capacitor	1μF	50V
C5	CQMA562K50	Capacitor	5600pF	50V
C6	CQMA562K50	Capacitor	5600pF	50V
C7 .	CQMA333K50	Capacitor	0.033μF	50V
C8	CQMA333K50	Capacitor	0.033µF	50V
С9	CQMA683K50	Capacitor	0.068μF	50V
C10	CQMA683K50	Capacitor	0.068μF	50V

Ref. Key	Parts No.	Description	1	
C11	CSZAR33M35	Capacitor	0.33μF	35V
C12	CSZAR33M35	Capacitor	0.33μF	35∨
C13	CEA010P50	Capacitor	1μF	50V
C14	CEA010P50	Capacitor	1μF	50∨
C15	CEA010P50	Capacitor	1μF	50V
C16	CEA010P50	Capacitor	1μF	50V
C17	CEA101P16	Capacitor	100μF	16V

12. VOLUME UNIT (CWX-259)

• Parts List

Ref. Key	Parts No.	Description	on	
VR1	CCS-166	Volume, 2	0kΩ (B)	
R1	CCN-031	Resistor	. 1kΩ	1/10W
R2	CCN-031	Resistor	1kΩ	1/10W
R3	CCN-031	Resistor	1kΩ	1/10W
R4	RD1/4PS102J	Resistor	1kΩ	1/4W

Ref. Key	Parts No.	Description	n	
C1	CSZAR22M35	Capacitor	0.22μF	35V
C2	CSZAR22M35	Capacitor	0.22μF	35V

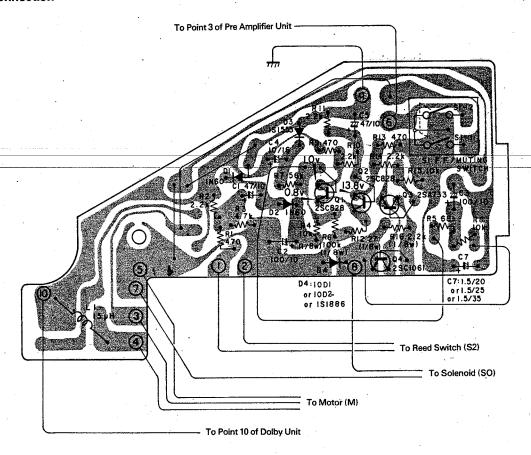
13. MISCELLANEOUS PARTS LIST

Ref. Key	Parts No.	Description			
D1	TLR-102	LED			
D2	TLG-102	LED			
C1	CEB471P16	Capacitor 470μF 16V			
IL1	CEL-080	Lamp, 8V 40mA			
TC1	CCG-022	Antenna Trimmer			
VR2	CCS-165	Volume, 20kΩ (C)			
S1	CCS-166	Volume			
S2	CSL-010	Switch ·			
S3	CSH-046	Switch			
S4	CSN-048	Switch			
S5	CSG-099	Switch			
S6	CSG-100	Switch			
S 7	CSN-043 or	Switch			
	CSN-055	Switch			
S8	CSG-099	Switch			

Ref. Key	Parts No.	Description	
L1	CTH-025	Coil, 4.7μH	
ANT	CDH-026	Antenna Connector	
so	CXP-021	Solenoid	
HD	CPB-040	Head	
M	CXM-049	Motor	
J1	CDE-457	Connector	
J2	CDE-453	Connector	
•			
	•		

11. SENSING UNIT (CWK-172)

• Parts Connection



• Parts List

10D2 or

151886

CTH-054

CSN-047

Diode

Coil, 100µH

MISCELLANEOUS

Ref. Key Q1,2 Q3 Q4 D1,2

D3 D4 D5 D6

Parts No.	Description	Ref. Key	Parts No.	Description	on .	Ref. Ke	ЗУ
2SC828	Transistor	R1	RD1/4VS471J	470Ω	1/4W	C1 '	•
2SA733	Transistor	R2	RD1/4∀S222J	2.2kΩ	1/4W	C2.3	
2SC1061	Transistor	R3	RD1/4VS472J	4.7kΩ	1/4W	C4	4
IN-60	Diode	R4	CCN-023	10kΩ	1/8W	C5	
1S188FM-1	Diode	R5	RD1/4VS683J	68kΩ	1/4W	C6	
VACANT		- R6	RD1/8PS104J	100kΩ	1/8W	C7	•
1S1555	Diode	R7	RD1/4VS563J	56kΩ	1/4W		
VACANT		88	RD1/4VS103J	10kΩ	1/4W		
10D1 or	Diode	R9	RD1/4VS471J	470Ω	1/4W		
1000	- •	010.11	DD4 / 41/C000 /	2 260	1/414/		

RD1/4VS222J

CCN-022 RD1/4VS471J

RD1/4VS222J

RD1/4VS103J CCN-021

2.2k**Ω**

27Ω 470Ω

2.2kΩ

10kΩ

RESISTORS

R8 R9 R10,11

R12

R13

R14

R15

17-400	-
1/4W	C4
1/8W	C5
1/4W	C6
1/8W	C7
1/4W	
1/4W	
1/4W	
1/4W	
1/8W	-
1/4W	

1/4W

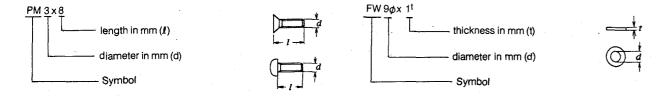
1/4W

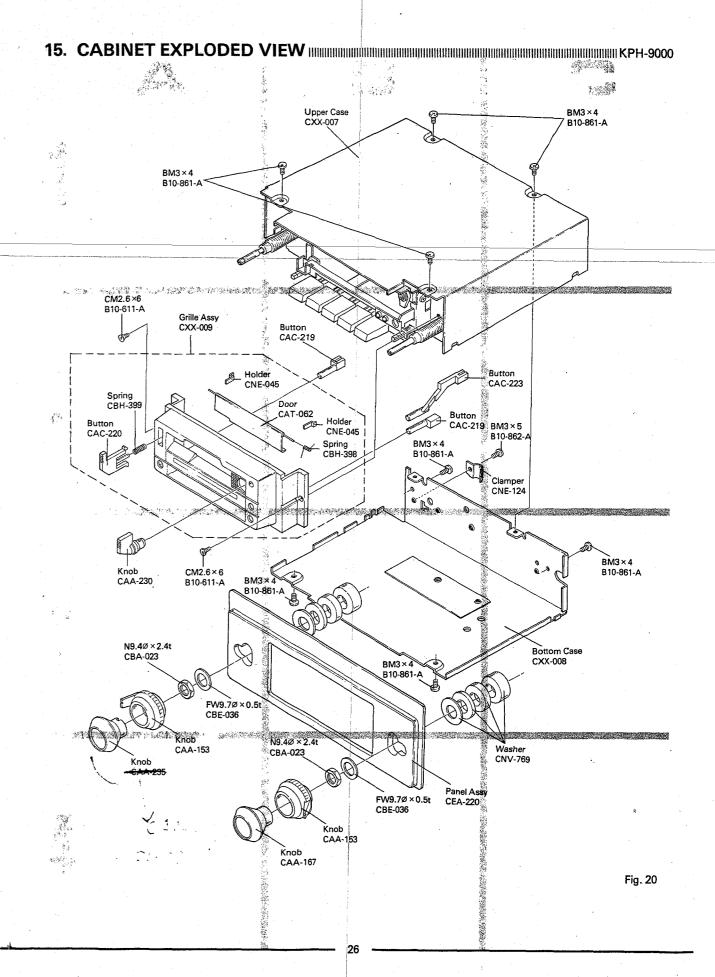
Ref. Key	Parts No.	Description	n
C1	CEA470P10	47µF	100
C2.3	CEA101P10	100µF	10V
C4	CEA100P16	10µF	. 16V
C5	CEA470P10	47µF	107
C6	VACANT		
C7	CSZA1R5M25	1.5µF	200

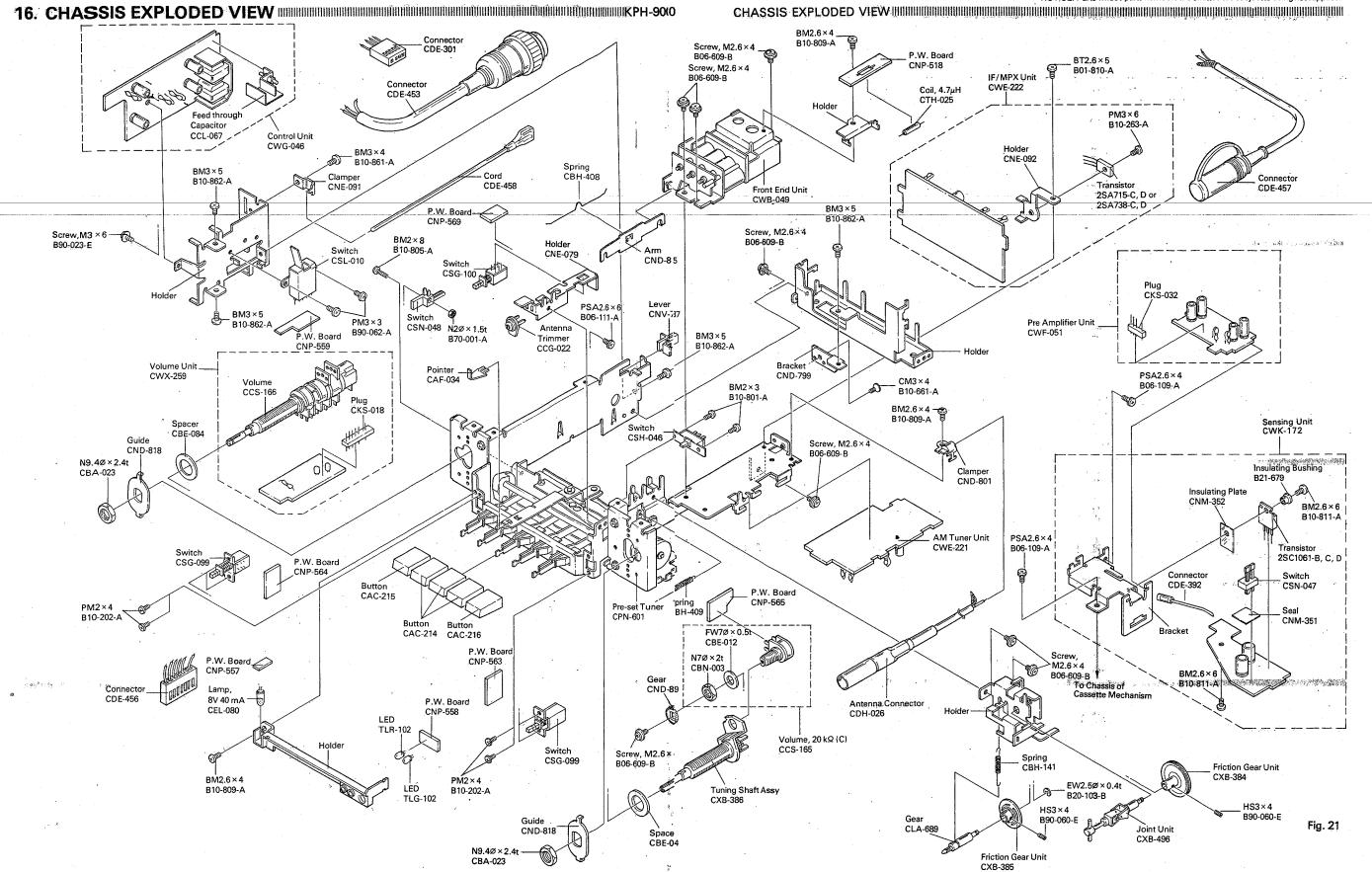
14. NOMENCLATURE OF SCREWS, WASHERS AND NUTS

Symbol	Description	Shape	Symbol	Description	Shape
RT	Brazier head tapping screw		EW	E type washer	C
PT	Pan head tapping screw	()—	FW	Flat washer	0 1
вт .	Binding head tapping screw		sw	Spring lock washer	© 1
СТ	Countersunk head tapping screw		N	Nut ·	0 [
TT	Truss head tapping screw		WN	Washer faced nut	
ост	Oval countersunk head tapping screw		ITW	Internal toothed lock washer	0 1
РМ	Pan head machine screw		OTW	Outernal toothed lock washer	£000
СМ	Countersunk head machine screw		SC	Slotted set screw (Cone point)	⊕ ฌ
осм	Oval countersunk head nachine screw		SF	Slotted set screw (Flat point)	0 5
ТМ	Truss head machine screw		HS	Hexagon socket headless set screw	0 D
ВМ	Binding head machine screw		ocw	Oval countersunk head wood screw	
PSA	Pan head screw with spring lock washer		cw	Countersunk head wood screw	- AMOREMENT COMMENTERS
PSB	Pan head screw with spring lock washer and flat washer		RW	Round head wood screw	
PSF	Pan head screw with flat washer				

EXAMPLE







17. PACKING METHOD

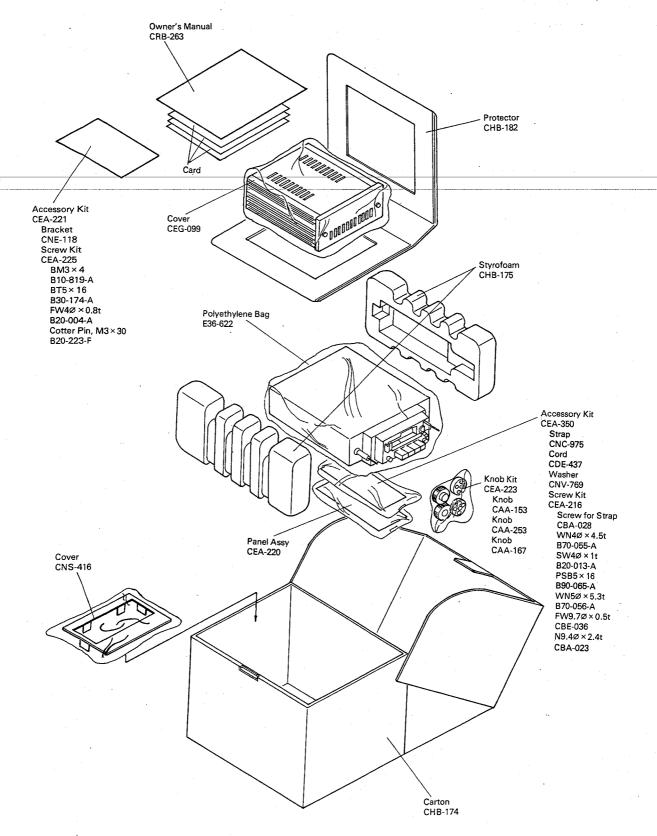


Fig. 22

CASSETTE MECHANISM INFORMATION

1. MECHANISM DESCRIPTION

Cassette Loading

 Cassette insertion causes Arm (1) to move in the arrowed direction (see Fig. 1).

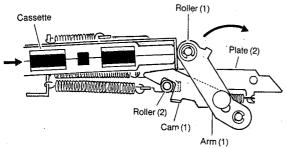
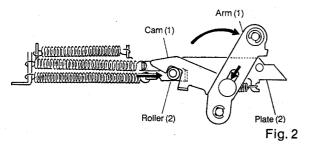


Fig. 1

 Cam (1) draws Roller (2) to the right (see Fig. 2). With this, the fulcrum of Cam (1) causes the oval hole in Arm (1) to move downward.



3. Simultaneous with the movement of Roller (2), Plate (1) starts to move and pushes Plate (2) rightward (see Fig. 3).

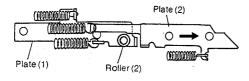


Fig. 3

4. Arm (2) is designed to cause vertical cassette movements. In eject position, Arm (2) locks Plate (2) at point A, and, by tension of Spring (2), is left at the position where Plate (2) comes to a stop (see Fig. 4).

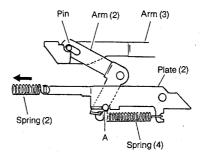


Fig. 4

5. With Plate (2), moving rightward, as mentioned in 1~3 above, Arm (2), through tension of Spring (4), acts to lower the cassette holder pin (see Fig. 5). However, this pin, which is supported by point B of Arm (3), is left stopped through its own inertia.

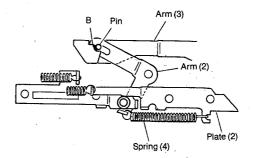


Fig. 5

6. With Arm (1) pushed to the stroke limit, the notched part of Arm (3) locks Arm (1), with the result that, by the action of Spring (6), Arm (3) moves leftward a distance corresponding to the stroke in the oval hole at point C (see Fig. 6). The pin, then, now freed from support, as described in Item 5 descends and drops the cassette (see Fig. 7).

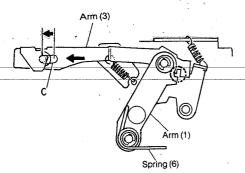


Fig. 6

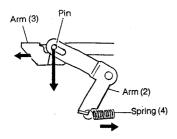


Fig. 7

• Head Base

1. The head base is kept engaged with Plate (3) through Arm (4). Plate(3) moves to the right and causes Arm (4) to rotate with point D as a fulcrum and, in turn, to cause the Head Base to move forward (see Fig. 8). However, it is necessary that the Head Base not move forward until the cassette drops into position.

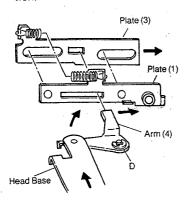


Fig. 8

2. For this purpose, Arm (5) is locked by Plate (3) until the cassette is positioned (see Fig. 9).

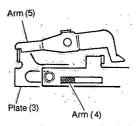


Fig. 9

 The drop of the cassette causes the pin to push down the right end of Arm (5) and release the locking of Plate (3). Spring (1) then causes Plate (3) to move to the right and, in turn, move the Head Base forward (see Fig. 10).

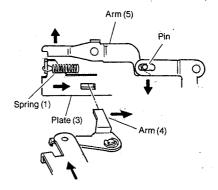


Fig. 10

• Eject Mechanism

 Push Cam (2) to eject the cassette (see Fig. 11). Push Cam (2) in the arrowed direction to push up Cam (1) and disengage it from Roller (2).
 Plate (1) is pulled leftward through Spring (3).

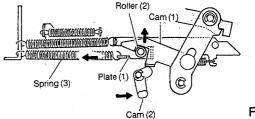


Fig. 11

MECHANISM DESCRIPTION III MUNICIPALITATION III MUNI

Plate (3), through Spring (1), moves together with Plate (1) to turn Arm (4) and to make the Head Base move backward (see Fig. 12).

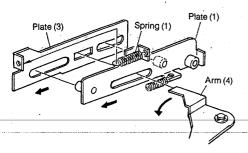


Fig. 12

3. With Plate (2) moving leftward, Arm (2) is pushed in the arrowed direction (Fig. 13) and lifts the pin, causing the cassette to rise.

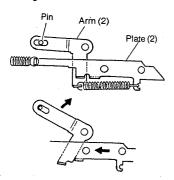


Fig. 13

4. Leftward movement of Plate (2) causes the pin calked by Plate (2) to push up Arm (7), so that the locking of Arm (3) with the notched part of Arm (1) is released (see Fig. 14).

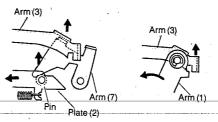


Fig. 14

5. With this, Arm (1), through Spring (6), starts to rotate in the arrowed direction and push out the cassette (see Fig. 15).

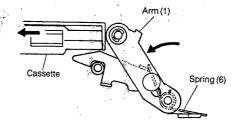


Fig. 15

• F.F. Mechanism (see Fig. 16)

- Turn the F.F./Rewind knob to F.F. to make Lever (1) move left and be locked by Roller (3). Lever (2) interlocked with Roller (3) is pulled together with Lever (3).
- 2. With Lever (3) pulled, Pin (1) interlocked with the eject cam is moved inward. With Pin (1) moving inward, the pushing of Lever (2) (directly connected with the eject button) will not cause cassette ejection, but instead release F.F. movement only.
- Also, with Lever (1) moving left, Cam (1) moves in the arrowed direction and causes the Head Base to retreat and the Pinch Roller and Capstan Shaft to separate.
- The movement of the Head Base causes Arm (1) to turn ON the F.F./Muting Switch to permit turning of motor at high speed.

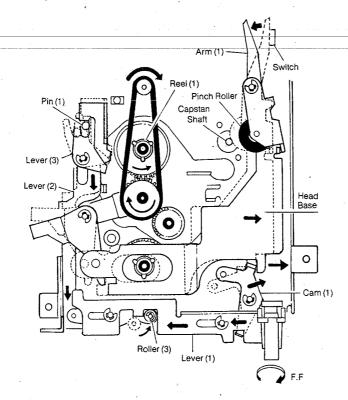


Fig. 16

• Rewind Mechanism (see Fig. 17)

- Turning of the F.F./Rewind knob to the REW side causes Lever (1) to move rightward and be locked by Roller (3).
- As in the function of the F.F. mechanism, Pin (1) moves inward.
- 3. With Lever (1) moving rightward, the Head Base is
- retreated by the left end of Lever (1). Simultaneously, Cam (1) moves in the arrowed direction and pulls Lever (4).
- 4. With Lever (4) pulled, the linking gear moves toward Reel (2) and transmits motor rotation to Reel (2).

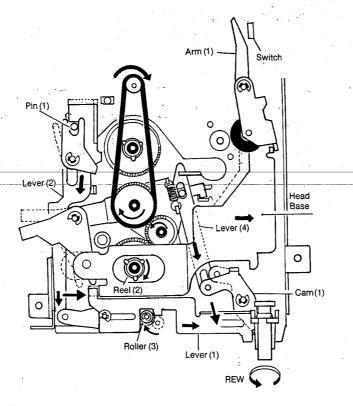


Fig. 17

2.1 AZIMUTH ADJUSTMENT

- Connect VTVM and the speaker (4Ω) to the output lead in parallel. Connect the red lead to a DC regulated power supply and apply 13.8V.
 Insert a 333Hz (STD-341) test tape. With balance set at
- Insert a 333Hz (STD-341) test tape. With balance set at medium and tone at maximum, turn volume for an output reading of 0dB.
- 3. Insert a 6.3kHz (STD-341) test tape.
- 4. Turn the azimuth adjusting screw so that outputs of Lch and Rch are each at maximum symmetrically (Fig. 18).



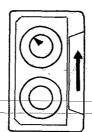
Fig. 18

2.3 CHECK POINTS OF CASSETTE MECHANISM

When replaced or repaired cassette mechanism parts, refer to values in the following table.

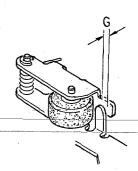
(1) Wind torque

Take measurement for 5~6 seconds using a cassette torque meter (120g/cm) to make sure torque is 55~75g/cm.



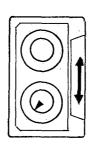
(5) Clearance between pinch roller and head base stopper

Determine using a thickness gauge that clearance is 0.5±0.2 mm, when in play mode.



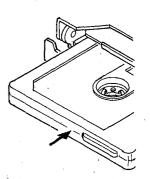
(2) F.F. and rewind torque

Take measurement for 5 ~ 6 seconds using a cassette torque meter (120g/cm) to make sure torque is 65g/cm or more.



(6) Cassette loading force

Using tension gauge (3 kg) at the center of the cassette, check to make sure the indication is less than 2.3 kg.



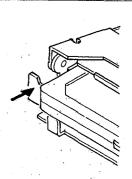
(3) Pinch roller press adhesion force

Measure using a tension gauge (500g) to make sure the load is $200 \sim 300g$ with the pinch roller starting to rotate in contact with the capatan shaft.



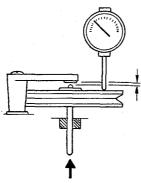
(7) F.F. and rewind releasing force

Using a tension gauge (1 kg) in the arrowed direction, check to make sure the indication is less than 0.5 kg.



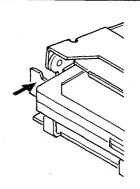
(4) Clearance between flywheel and flywheel bracket

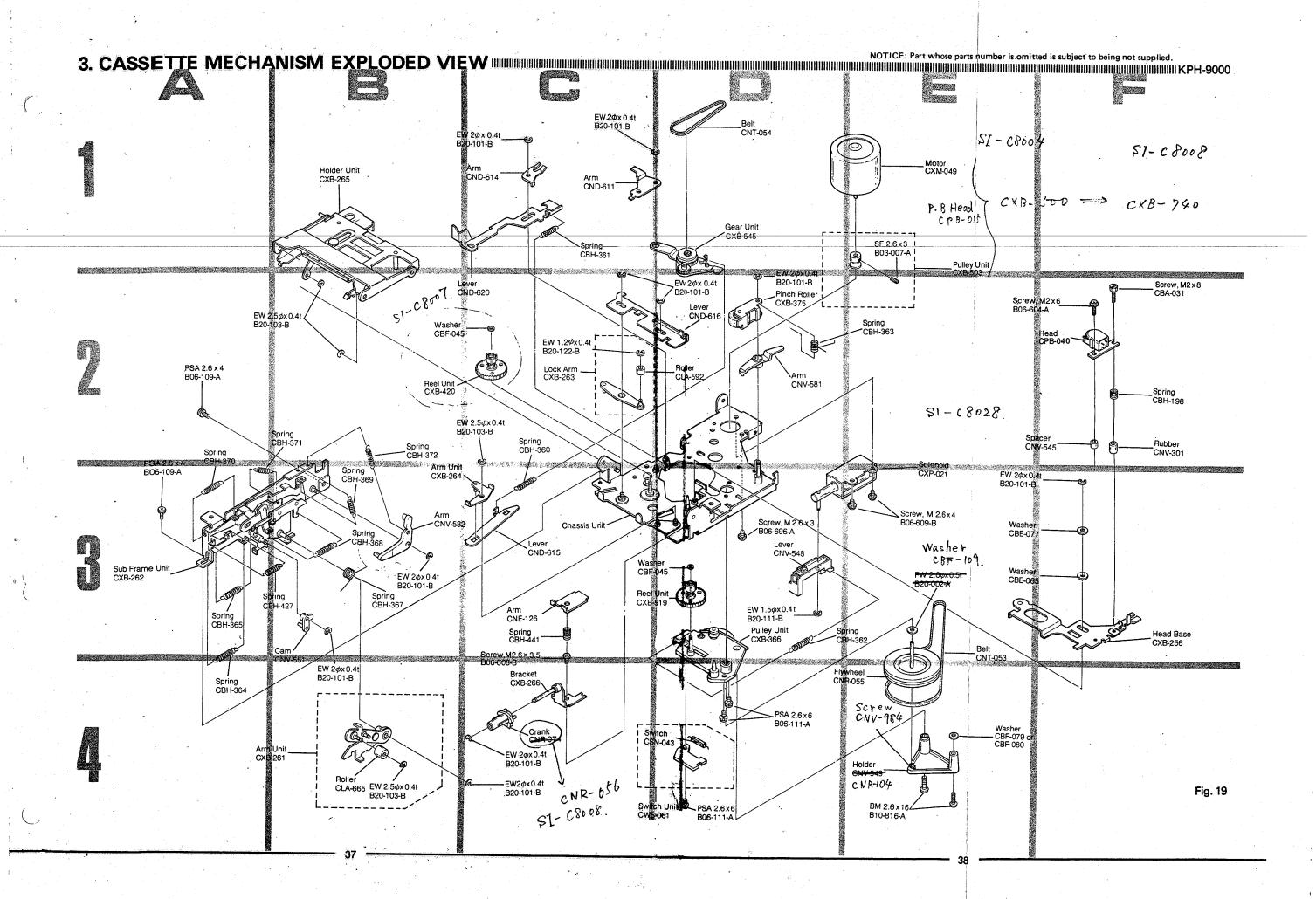
Set a dial pick gauge as shown in the figure, and check to make sure the difference is between 0.1 mm and 0.5 mm, when the flywheel is applied with pressure in the arrowed direction.



(8) Eject force

Using tension gauge (3 kg) in the arrowed direction, check to make sure the indication is less than 1 kg.





KP-66G

CAR STEREO CASSETTE DECK

SERVICE MANUAL

561



SPECIFICATIONS

General	
Power source	DC 13.8V (11 \sim 16V allowable)
Grounding system	Negative type
Dimensions (W x H x D)	122x 50 x 155 mm
Weight	1.3 kg
Tape player	
Tape	Compact cassette tape (C-30~C-90)
Tape speed	4.8cm/sec.
Fast forward time	Within 120 sec. for C-60
	Within 120 sec. for C-60
Tape speed	

No more than 0.13% (WRMS)
30∼15,000 Hz
46 dB
More than 52 dB
Bass: ± 10 dB (100 Hz)
Treble: ± 10 dB (10 kHz)
$\dots + 12 dB (100 Hz),$
+ 4 dB (10 kHz)
More than 200 mV
100Ω

Specifications and the design subject to possible modification



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1. PARTS LOCATION

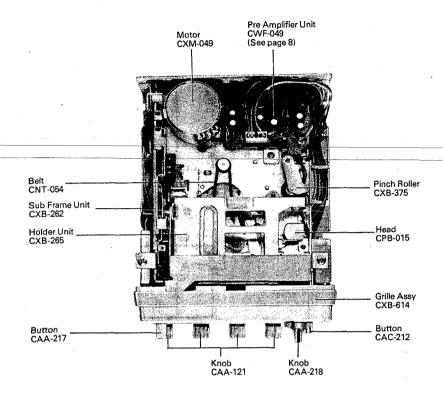
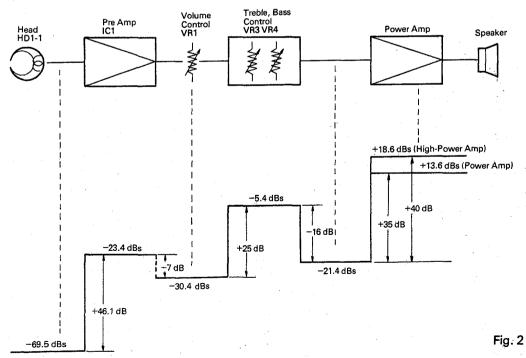


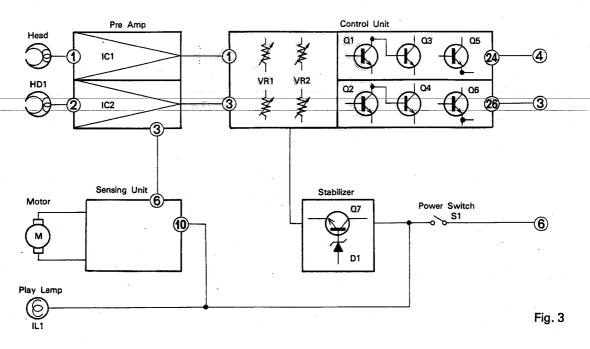
Fig. 1

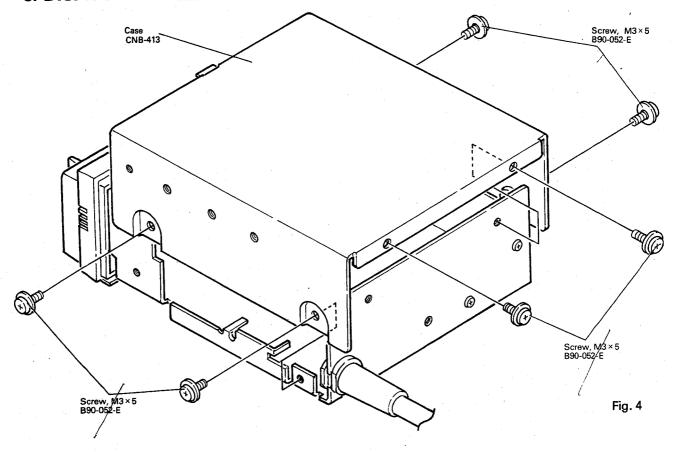
2. CIRCUIT DESCRIPTION

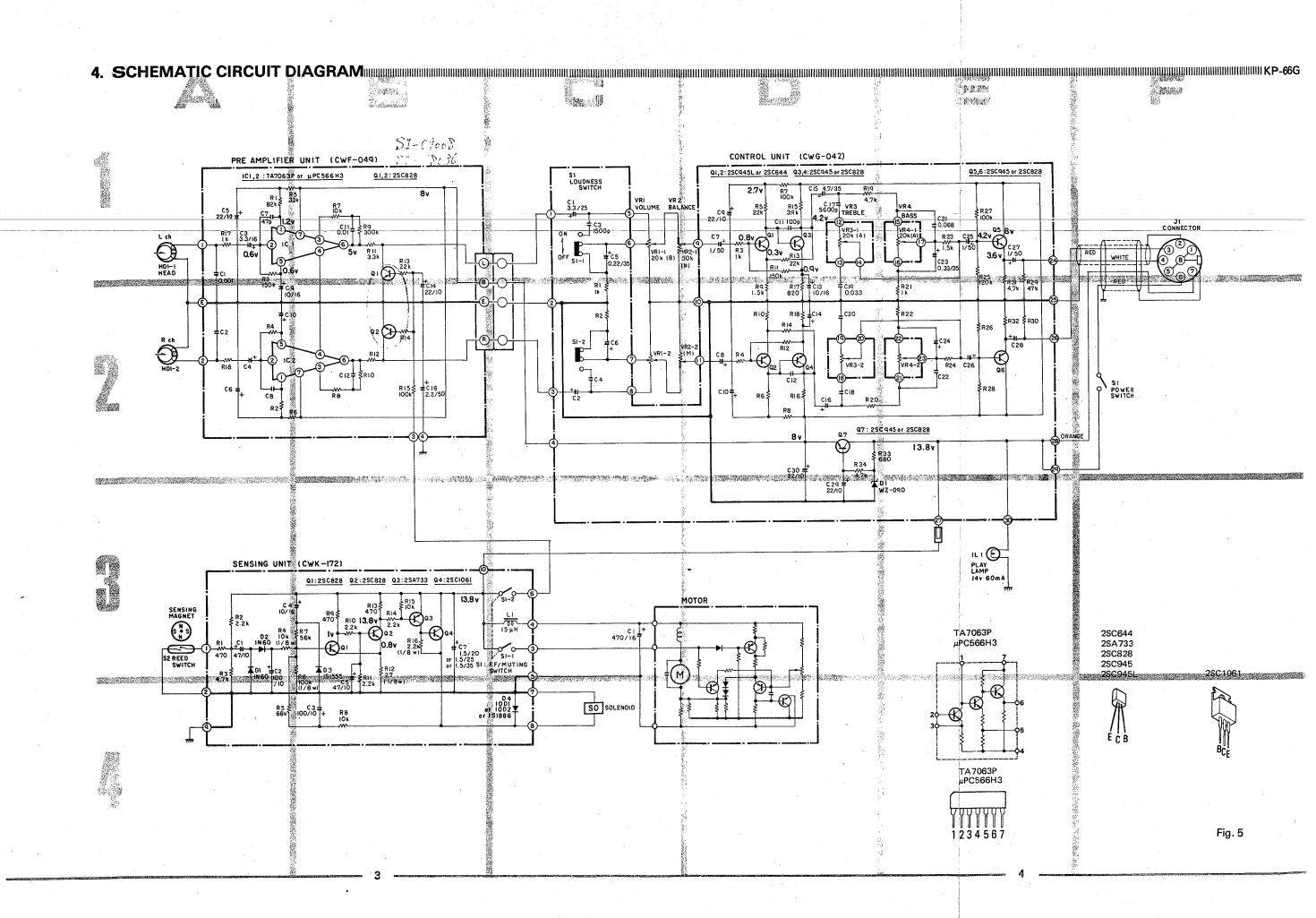
• Level Diagram



• Block Diagram







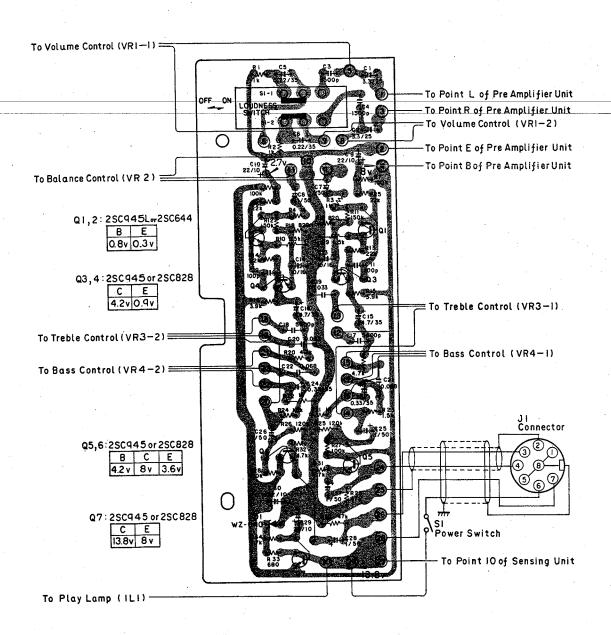


Fig. 6

NOTICE: Of the descriptive symbols of the resistor and capacitor, the encircled alphabetic letter denotes the allowable error.

Example: RD1/4VS100 ① C:±0.25pF F:±1pF J:±5% M:±20% Z: +80 -20

CEA100 P 25 D:±0.5pF G:±2% K:±10% X: +40% P: +100 %

• Parts List MISCELLANEOUS

Ref. Key	Parts No.	Description		Ref. Key	Parts No.	Description
Q1	2SC945L-K, P or	Transistor	•	Q.6	2SC945-K, P, Q	orTransistor
	2SC644-R, S	Transistor			2SC828-Q, R, S	Transistor
02	2SC945L-K, P or	Transistor		Q7	2SC945-K, P, Q	orTransistor
	2SC644-R. S	Transistor			2SC828-Q, R, S	Transistor
O3	2SC945-K, P, Q o	rTransistor	·	D1	WZ-090	Diode
	2SC828-Q, R, S	Transistor		S1	CSG-096	Switch
Q4	2SC945-K, P, Q c	orTransistor				
	2SC828-Q, R, S	Transistor				
Q5	2SC945-K, P, Q o	orTransistor				
	2SC828-Q, R, S	Transistor				

RESISTORS

Ref. Key	Parts No.	Description			Ref. Key	Parts No.	Descriptio	n	٠
R1	RD1/4VS102J	Resistor	1kΩ	1/4W	. R21	RD1/4VS102J	Resistor	1kΩ	1/4W
R2	RD1/4VS102J	Resistor	1kΩ	1/4W	R22	RD1/4VS102J	Resistor	1kΩ	1/4W
R3 .	RD1/4VS102J	Resistor	1kΩ	1/4W	R23	RD1/4VS152J	Resistor	1.5k Ω	1/4W
R4	RD1/4VS102J	Resistor	1kΩ	1/4W	R24	RD1/4VS152J	Resistor	1.5kΩ	1/4W
R5	RD1/4VS223J	Resistor	22 kΩ	1/4W	R25	RD1/4VS124J	Resistor	120kΩ	1/4W
R6	RD1/4VS223J	Resistor	22 kΩ	1/4W	R26	RD1/4VS124J	Resistor	120kΩ	1/4W
R7	RD1/4VS104J	Resistor	100kΩ	1/4W	R27	RD1/4VS104J	Resistor	100kΩ	1/4W
R8	RD1/4VS1Q4J	Resistor	100kΩ	1/4W	R28	RD1/4VS104J	Resistor	100kΩ	1/4W
R9	RD1/4VS152J	Resistor	1.5kΩ	1/4W	R29	RD1/4VS473J	Resistor	47kΩ	1/4W
R10	RD1/4VS152J	Resistor	1.5kΩ	1/4W	R30	RD1/4VS473J	Resistor	47kΩ	1/4W
R11	RD1/4VS154J	Resistor	150kΩ	1/4W	R31	RD1/4VS472J	Resistor	4.7kΩ	1/4W
R12	RD1/4VS154J	Resistor	150kΩ	1/4W	R32	RD1/4VS472J	Resistor	4.7kΩ	1/4W
R13	RD1/4VS223J	Resistor	22kΩ	1/4W	R33	RD1/4VS681J	Resistor	680Ω	1/4W
R14	RD1/4VS223J	Resistor	22 kΩ	1/4W	R34	RD1/4VS472J	Resistor	4.7kΩ	1/4W
R15	RD1/4VS392J	Resistor	3.9 kΩ	1/4W					
R16	RD1/4VS392J	Resistor	3.9k Ω	1/4W					
R17	RD1/4VS821J	Resistor	820 Ω	1/4W					
R18	RD1/4VS821J	Resistor	820 Ω	1/4W					
R19	RD1/4VS472J	Resistor	4.7kΩ	1/4W				•	
R20	RD1/4VS472J	Resistor	4.7kΩ	1/4W					

CAPACITORS

Ref. Key	Parts No.	Description	,	ì	Ref. Key	Parts No.	Description	1	
	CEA3R3P25	Capacitor	3.3µF	25V	C16	CEA4R7P35	Capacitor	4.7μF	35V
C2	CEA3R3P25	Capacitor	3.3µF	2 5V	C17	CQMA562K50	Capacitor	5600pF	50V
C2 C3	CQMA152K50	Capacitor	1500pF	50V	C18	CQMA562K50	Capacitor	5600pF	50V
C4	CQMA152K50	Capacitor	1500pF	50V	C19	CQMA333K50	Capacitor	0.033μF	
C5	CSZAR22M35	Capacitor	0.22μF	35V	C20	COMA333K50	Capacitor	0.033μF	50V
C6	CSZAR22M35	Capacitor	0.22μF	35V	C21	CQMA683K50	Capacitor	0.068μF	50V
C0 C7	CEA010P50	Capacitor	1μF	50V	C22	CQMA683K50	Capacitor	0.068μF	50V
•	CEA010P50	Capacitor	1µF	50V	C23	CSZAR33M35	Capacitor	$0.33 \mu F$	3 5V
C8	CEA220P10	Capacitor	22 μF	10V	C24	CSZAR33M35	Capacitor	0.33μ F	3 5V
C9 C10	CSZA220M10	Capacitor	22μF	10V	C25	CEA010P50	Capacitor	1μF	50V
C11	CCDSL101K50	Capacitor	100pF	50V	C26	CEA010P50	Capacitor	1μF	50V
C12	CCDSL101K50	Capacitor	100pF	50V	C27	CEA010P50	Capacitor	1μF	50V
C12	CEA100P16	Capacitor	10μF	16V	C28	CEA010P50	Capacitor	. 1μF	50V
C14	CEA100P16	Capacitor	10μF	16V	C29	CEA220P10	Capacitor	22μF	10V
C14	CEA4R7P35	Capacitor	4.7μF	35V	C30	CEA220P10	Capacitor	22μ F	10V

6. PRE AMPLIFIER UNIT (CWF-049)

Parts Connection

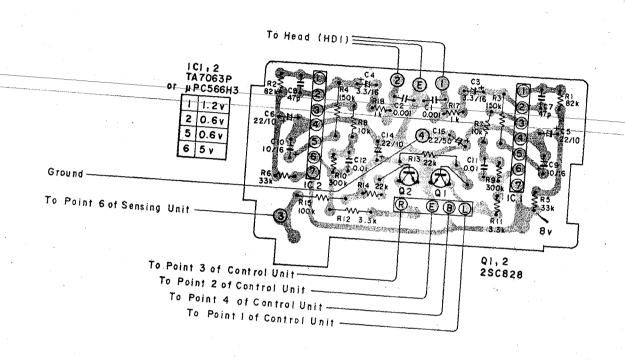


Fig. 7

• Parts List

MISCELLANEOUS

Ref. Ke	y Parts No.	Description
IC1	TA7062D 0 -	- outripaon
	TA7063P-C,D,E or	IC
IC2	μPC566H3-N,M,L	IC
102	TA7063P-C, D, E or	IC
O1 ·	μPC566H3-N,M,L	IC
u i	2SC828-Q,R	Transistor

RESISTORS

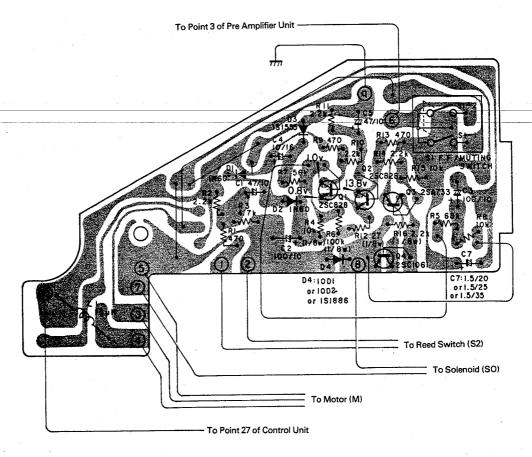
Ref. Key	Parts No.	Description	•		Ref. Key	Parts No.	Descriptio	n	
R1	RD1/4VS823J	Resistor	82kΩ	1/4W	R11	RD1/4VS332J	Resistor	3.3 kΩ	1/4W
R2	RD1/4VS823J	Resistor	82 kΩ	·1/4W	R12	RD1/4VS332J	Resistor	3.3kΩ	1/4W
R3	RD1/4VS154J	Resistor	150kΩ	1/4W	R13	RD1/4VS223J	Resistor	22 kΩ	1/4W
R4	RD1/4VS154J	Resistor	150kΩ	1/4W	R14	RD1/4VS223J	Resistor	22kΩ	1/4W
R5	RD1/4VS333J	Resistor	33 kΩ	1/4W	R15	RD1/4VS104J	Resistor	100kΩ	1/4W
R6	RD1/4VS333J	Resistor	33 kΩ	1/4W	R16	VACANT			
R7	RD1/4VS103J	Resistor	10kΩ	1/4W	R17	RD1/4VS 102J	Resistor	1kΩ	1/4W
R8	RD1/4VS103J	Resistor	10kΩ	1/4W	R18	RD1/4VS 102J	Resistor	1kΩ	1/4W
R9	RD1/4VS304J	Resistor	300 kΩ	1/4W					
R10	RD1/4VS304J	Resistor	300kΩ	1/4W				•	

CAPACITORS

Ref. Key	Parts No.	Description			Ref. Key	Parts No.	Description	n	
C1	CQMA102K50	Capacitor	0.001μF	50V	C11	CQMA103K50	Capacitor	0.01μF	50V
C2	CQMA102K50	Capacitor	0.001μF	50V	C12	CQMA103K50	Capacitor	0.01μF	50V
C3	CSZA3R3M16	Capacitor	3.3µF	16V	C13	VACANT			
C4	CSZA3R3M16	Capacitor	3.3µF	16V	C14	CSZA220M10	Capacitor	22µF	10V
C5	CEA220P10	Capacitor	22 μF	10V	C15	VACANT	<u></u>		
C6	CEA220P10	Capacitor	22μF	10V	C16	CEA2R2P50	Capacitor	2.2μF	50V
C7	CCDSL470K50	Capacitor	47pF	50V					
C8	CCDSL470K50	Capacitor	47pF	50V			-		
C9	CEA100P16	Capacitor	10μF	16V .					
C10	CEA100P16	Capacitor	10μF	16V					

7. SENSING UNIT (CWK-172)

• Parts Connection



• Parts List

MISCELLANEOUS

Ref. Key	Parts No.	Description
Q1	2SC828-R,S	Transistor
02	2SC828-R,S	Transistor
Q3	2SA733-Q,P,K	Transistor
Q4	2SC1061-B,C,D	Transistor
D1	1N60	Diode
D2	1N60	Diode
D3	1S1555	Diode
D4	10D1 or	Diode
	10D2 or	Diode
	1S1886	Diode

Fig. 8	8
--------	---

Ref. Key	Parts No.	Description	
S1 L1	CSN-047 T63-618	Switch Coil, 15µH	

Description

Capacitor

Capacitor

Capacitor

20V

25V

35V

1.5µF

1.5µF

1.5µF

RESISTORS

Ref. Key	Parts No.	Description	n		Ref. Key	Parts No.	Description	on ·	r
R1	RD1/4VS471J	Resistor	` 470Ω	1/4W	R11	RD1/4VS222J	Resistor	2.2kΩ	1/4W
R2	RD1/4VS222J	Resistor	2.2kΩ.	1/4W	R12	CCN-022	Resistor	27Ω	1/8W
R3	RD1/4VS472J	Resistor	4.7kΩ	1/4W	R13	RD1/4VS471J	Resistor	470Ω	1/4W
R4	CCN-023	Resistor	10kΩ	1/8W	R14	RD1/4VS222J	Resistor	2.2kΩ	1/4W
R5	RD1/4VS683J	Resistor	68kΩ	1/4W	R15	RD1/4VS103J	Resistor	10kΩ	1/4W
R6	RD1/8PS104J	Resistor	100kΩ	1/8W	R16	CCN-021	Resistor	2.2kΩ	1/8W
R7	RD1/4VS563J	Resistor	56 kΩ	1/4W					
R8	RD1/4VS103J	Resistor	10kΩ	1/4W					
R9	RD1/4VS471J	Resistor	470Ω	1/4W			•		
R10	RD1/4VS222J	Resistor	2.2kΩ	1/4W					

CAPACITORS

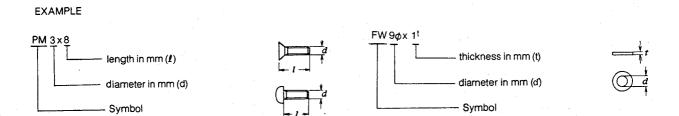
Ref. Key	Parts No.	Description	n		Ref. Key	Parts No.
C1	CEA470P10	Capacitor	47μF	10V		VACANT
C2	CEA101P10	Capacitor	100μF	10V	C7	CSZA1R5K20 or
C3	CEA101P10	Capacitor	100μF	10V		CSZA1R5K25 or
C4	CEA100P16	Capacitor	10μF	16V		CSZA1R5K35
C5	CEA470P10	Capacitor	47μF	10V		

8. MISCELLANEOUS PARTS LIST

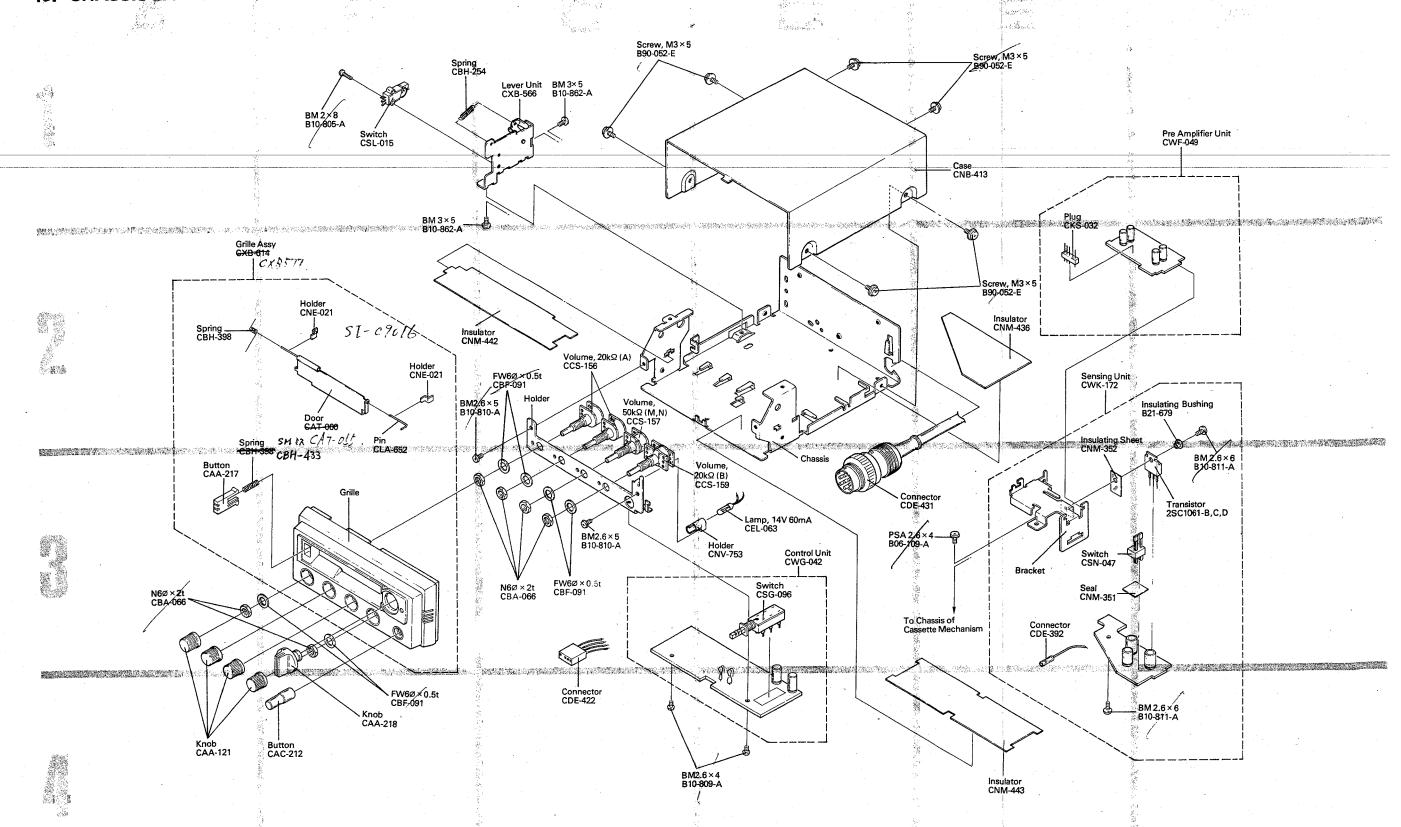
Ref. Key	Parts No.	Description	Ref. Key	Parts No.	Description
<u></u>	CXM-049	Motor	VR4	CCS-156	Volume, 20kΩ (A)
so	CXP-021	Solenoid	C1 -	CEA471P16	Capacitor 470µF 16V
HD1	CPB-015	Head			
S1	CSL-015	Switch			
S2	CSN-043	Switch			
IL1	CEL-063	Lamp, 14V 60mA			
J1	CDE-431	Connector			
VR1	CCS-159	Volume, 20kΩ (B)			
VR2	CCS-157	Volume, 50kΩ (M, N)			
VR3	CCS-156	Volume, 20kΩ (A)			

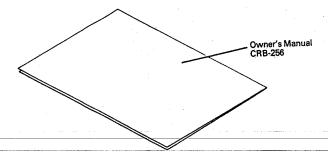
9. NOMENCLATURE OF SCREWS, WASHERS AND NUTS

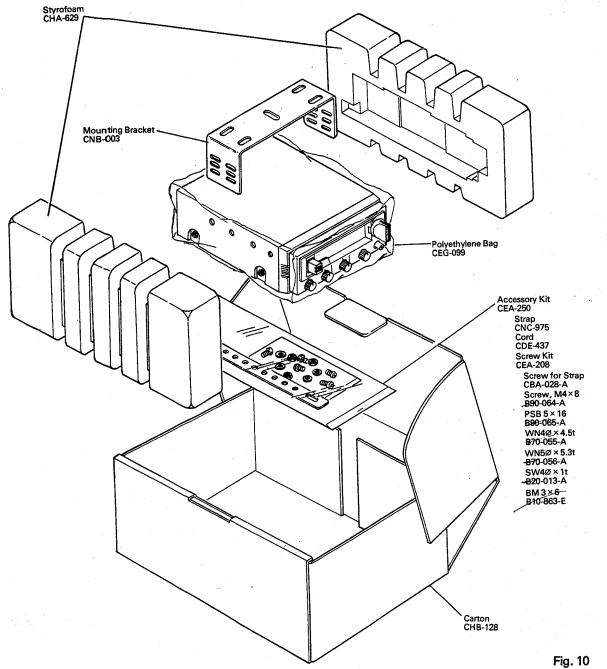
ymbol	Description	Shape	Symbol	Description	Sh	ape
RT	Brazier head tapping screw		EW	E type washer	(C)	
РТ	Pan head tapping screw		.FW	Flat washer	0	
BT	Binding head tapping screw		SW	Spring lock washer	(3)	<u> </u>
СТ	Countersunk head tapping screw		N .	Nut	0	
тт	Truss head tapping screw		WN	Washer faced nut	0	
ост	Oval countersunk head tapping screw		ITW	Internal toothed lock washer	0	
РМ	Pan head machine screw	()	отw	Outernal toothed lock washer	ĘŢ;	1
СМ	Countersunk head machine screw		sc	Slotted set screw (Cone point)	€	₽
ОСМ	Oval countersunk head machine screw		SF	Slotted set screw (Flat point)	е	٥
TM	Truss head machine screw		HS	Hexagon socket headless set screw	0	
ВМ	Binding head machine screw	(ocw	Oval countersunk head wood screw		
PSA	Pan head screw with spring lock washer		cw	Countersunk head wood screw		
PSB	Pan head screw with spring lock washer and flat washer		RW	Round head wood screw		
PSF	Pan head screw with flat washer	00				



10. CHASSIS EXPLODED VIEW







CASSETTE MECHANISM INFORMATION

1. MECHANISM DESCRIPTION

Cassette Loading

 Cassette insertion causes Arm (1) to move in the arrowed direction (see Fig. 1).

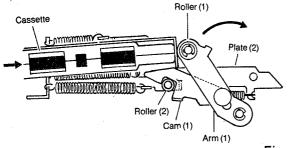
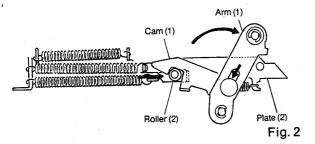


Fig. 1

 Cam (1) draws Roller (2) to the right (see Fig. 2). With this, the fulcrum of Cam (1) causes the oval hole in Arm (1) to move downward.



3. Simultaneous with the movement of Roller (2), Plate (1) starts to move and pushes Plate (2) rightward (see Fig. 3).

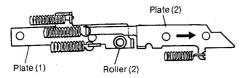


Fig. 3

4. Arm (2) is designed to cause vertical cassette movements. In eject position, Arm (2) locks Plate (2) at point A, and, by tension of Spring (2), is left at the position where Plate (2) comes to a stop (see Fig. 4).

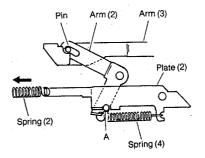


Fig. 4

5. With Plate (2), moving rightward, as mentioned in 1~3 above, Arm (2), through tension of Spring (4), acts to lower the cassette holder pin (see Fig. 5). However, this pin, which is supported by point B of Arm (3), is left stopped through its own inertia.

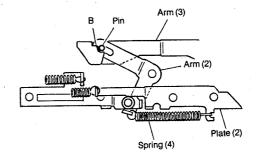
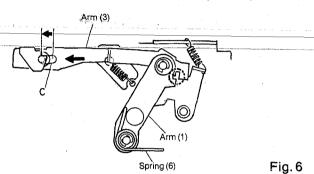


Fig. 5

6. With Arm (1) pushed to the stroke limit, the notched part of Arm (3) locks Arm (1), with the result that, by the action of Spring (6), Arm (3) moves leftward a distance corresponding to the stroke in the oval hole at point C (see Fig. 6). The pin, then, now freed from support, as described in Item 5 descends and drops the cassette (see Fig. 7).



Head Base

1. The head base is kept engaged with Plate (3) through Arm (4). Plate(3) moves to the right and causes Arm (4) to rotate with point D as a fulcrum and, in turn, to cause the Head Base to move forward (see Fig. 8). However, it is necessary that the Head Base not move forward until the cassette drops into position.

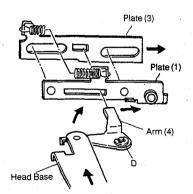


Fig. 8

Fig. 7

2. For this purpose, Arm (5) is locked by Plate (3) until the cassette is positioned (see Fig. 9).

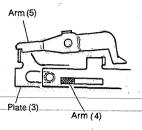


Fig. 9

3. The drop of the cassette causes the pin to push down the right end of Arm (5) and release the locking of Plate (3). Spring (1) then causes Plate (3) to move to the right and, in turn, move the Head Base forward (see Fig. 10).

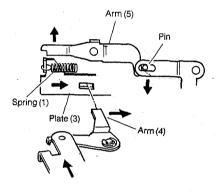


Fig. 10

Eject Mechanism

 Push Cam (2) to eject the cassette (see Fig. 11). Push Cam (2) in the arrowed direction to push up Cam (1) and disengage it from Roller (2). Plate (1) is pulled leftward through Spring (3).

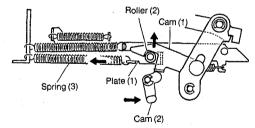


Fig. 11

2. Plate (3), through Spring (1), moves together with Plate (1) to turn Arm (4) and to make the Head Base move backward (see Fig. 12).

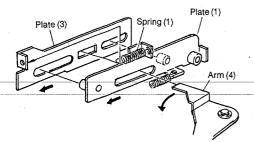


Fig. 12

3. With Plate (2) moving leftward, Arm (2) is pushed in the arrowed direction (Fig. 13) and lifts the pin, causing the cassette to rise.

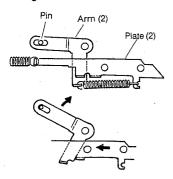


Fig. 13

4. Leftward movement of Plate (2) causes the pin calked by Plate (2) to push up Arm (7), so that the locking of Arm (3) with the notched part of Arm (1) is released (see Fig. 14).

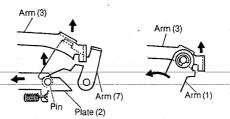


Fig. 14

5. With this, Arm (1), through Spring (6), starts to rotate in the arrowed direction and push out the cassette (see Fig. 15).

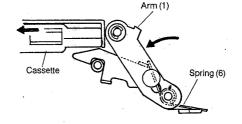


Fig. 15

• F.F. Mechanism (see Fig. 16)

- 1. Turn the F.F./Rewind knob to F.F. to make Lever (1) move left and be locked by Roller (3). Lever (2) interlocked with Roller (3) is pulled together with Lever (3).
- With Lever (3) pulled, Pin (1) interlocked with the eject cam is moved inward. With Pin (1) moving inward, the pushing of Lever (2) (directly connected with the eject button) will not cause cassette ejection, but instead release F.F. movement only.
- Also, with Lever (1) moving left, Cam (1) moves in the arrowed direction and causes the Head Base to retreat and the Pinch Roller and Capstan Shaft to separate.
- The movement of the Head Base causes Arm (1) to turn ON the F.F./Muting Switch to permit turning of motor at high speed.

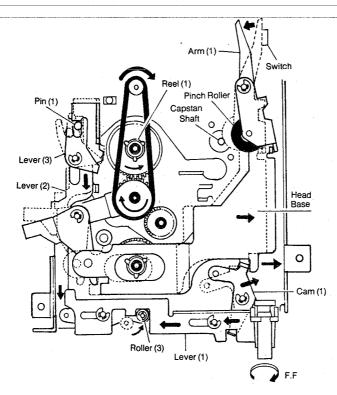


Fig. 16

• Rewind Mechanism (see Fig. 17)

- Turning of the F.F./Rewind knob to the REW side causes Lever (1) to move rightward and be locked by Roller (3).
- As in the function of the F.F. mechanism, Pin (1) moves inward.
- 3. With Lever (1) moving rightward, the Head Base is
- retreated by the left end of Lever (1). Simultaneously, Cam (1) moves in the arrowed direction and pulls Lever (4).
- 4. With Lever (4) pulled, the linking gear moves toward Reel (2) and transmits motor rotation to Reel (2).

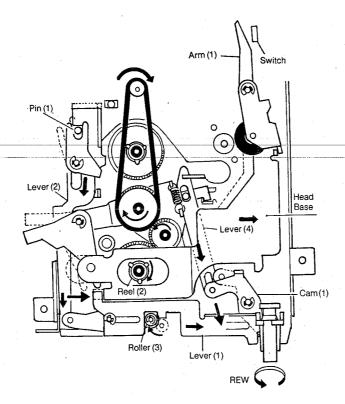


Fig. 17

2. ADJUSTMENT

2.1 AZIMUTH ADJUSTMENT

- 1. Connect VTVM and the speaker (4 Ω) to the output lead in parallel. Connect the red lead to a DC regulated power supply and apply 13.8V.
- 2. Insert a 333Hz (STD-341) test tape. With balance set at medium and tone at maximum, turn volume for an output reading of 0dB.
- 3. Insert a 6.3kHz (STD-341) test tape.
- Turn the azimuth adjusting screw so that outputs of Lch and Rch are each at maximum symmetrically (Fig. 18).

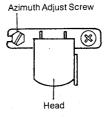


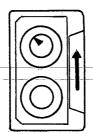
Fig. 18

2.3 CHECK POINTS OF CASSETTE MECHANISM

When replaced or repaired cassette mechanism parts, refer to values in the following table.

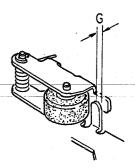
(1) Wind torque
Take measurement for 5~
6 seconds using a cassette torque meter

sette torque meter (120g/cm) to make sure torque is 55 ~ 75g/cm.



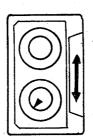
(5) Clearance between pinch roller and head base stopper

Determine using a thickness gauge that clearance is 0.5±0.2 mm, when in play mode.



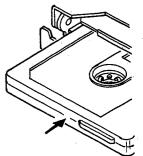
(2) F.F. and rewind torque

Take measurement for 5~6 seconds using a cassette torque meter (120g/cm) to make sure torque is 65g/cm or more.



(6) Cassette loading force

Using tension gauge (3 kg) at the center of the cassette, check to make sure the indication is less than 2.3 kg.



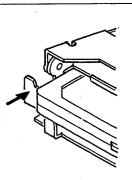
(3) Pinch roller press adhesion force

Measure using a tension gauge (500g) to make sure the load is $200 \sim 300g$ with the pinch roller starting to rotate in contact with the capatan shaft.



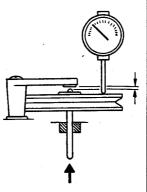
(7) F.F. and rewind releasing force

Using a tension gauge (1 kg) in the arrowed direction, check to make sure the indication is less than 0.5 kg.



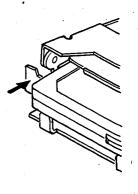
(4) Clearance between flywheel and flywheel bracket

Set a dial pick gauge as shown in the figure, and check to make sure the difference is between 0.1 mm and 0.5 mm, when the flywheel is applied with pressure in the arrowed direction.



(8) Eject force

Using tension gauge (3 kg) in the arrowed direction, check to make sure the indication is less than 1 kg.



PIONEER ELECTRONIC CORPORATION

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SERVICE INFORMATION

No. SI-C34034

Model: KP-88G, KP-66G, KPH-636/E, KPH-838/E, KPX-9000, KPX-600, KPX-9500

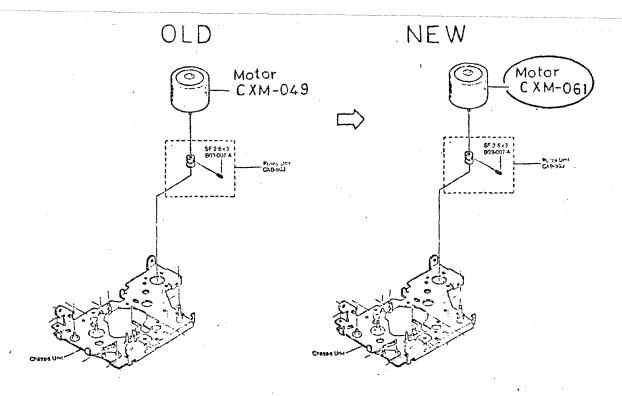
SUBJECT:

Change of Motor for Cassette Mechanism Unit.

(an electronic sensing operation ——> an Mechanism sensing operation)

REASON:

Convenience on procurement.



- NOTICE:
- 1. Old (CXM-049) and New (CXM-061) Motors are not interchangeable, because operation of Motor is different. But New Motor (CXM-061) can be used for unmodified Model.
- 2. If you use old motor for Modified Model, Motor does not work.
- 3. We will supply only New Motor (CXM-061) from now on.

APPLICABLE SERIAL No. :

KP-88G/U	48501∿	КРН-636/Е	2101~	KPX-600/U	43201∿
KP-88G/C	48501∿	KPH-838/E	2501∿	KPX-600/C	43201∿
KP-88G/E	50001∿	KPX-9000/U	94001∿	KPX-9500/U	1∿
KP-66G/U	28001∿	KPX-9000/C	94001∿	KPX-9500/C	1∿
KP-66G/C	28001∿	KPX-9000/UM	2401∿		
KP-66G/E	24501∿	\$		•	

SERVICE INFORMATION

No. SI-C34031

Model: The following cassette mechanism models.

SUBJECT: Cassette mechanism for Car Stereo.

Cassette mechanism listed below can be supplied as Service Parts.

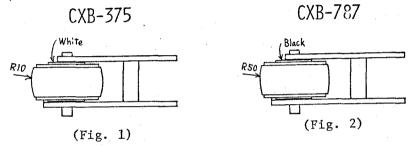
Parts No.	Applicable Model
CXB-315	KP-8000/ZEP, ZE, G, GF, U, C KP-8300/ZEP, ZE
	KP-8001/ZEP KP-8005/G, GF, U, C KP-5300/ZEP KP-5005/G, GF, U, C
	KP-5000/ZE KP-6000/E KP-6300/E KP-6001/E
	KP-6002/E KP-6400/E KP-8005F/F KP-6011F/F
CXB-560	KPH-838/U, E KPH-636/E KP-88G/U, C, E KP-66G/U, C, E KPH-9000/U
CXB-720	KP-9300/E KP-9000/E KE-3000/U, C
CXB-770	KE-2000/U, C, E KE-2002/U KE-2300/E
CXB-760	КРН-9000/U КРХ-9000/U, C, UM КРХ-600/U, C

KP-66G, KP-88G, KP-292, KP-5000, KP-5005, KP-5300; KP-6000, KP-6001, MODEL: KP-6002, KP-6011F, KP-6300, KP-6400, KP-8000, KP-8001, KP-8005, KP-8300, KP-9000, KP-9300, KPH-636, KPH-838, KPH-9000, KPX-600,

KPX-9000, KE-2000, KE-2002, KE-2300

SUBJECT: Modification of the roller unit.

REASON: To improve wow and flutter.

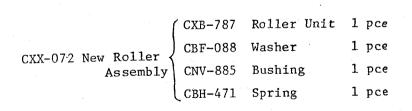


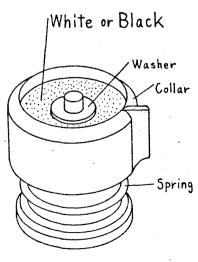
Interchangeability --- Referring to Fig. 3, see what color the head of the supplying Reel is.

- The new Roller Unit, CXB-787, can be mounted on the Interchangeable: a) models underlined above which have a black head.
- The Supplying Reel shall be modified when mounting Uninterchangeable: b) the new Roller on the units of old lots of the models NOT underlined above which have a white head.

Replacing the Roller Unit of (b)

When using CXB-787, supplying Reel requires back tension. Without the back tension, the tape will be chewed. Refer to Service Info., SI-C8007. Units having CXB-420 or CXB-246 require the following new parts. The Roller Assembly, CXX-072, will be shipped to the order of CXB-375.

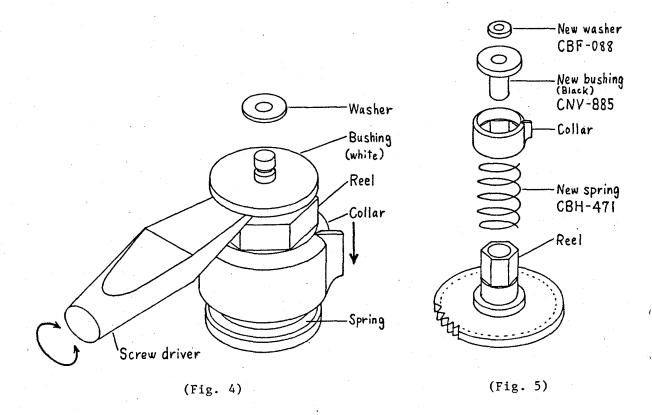




(Fig. 3)

Modifying Reel Unit:

- 1. Remove the Grill Unit.
- 2. Remove the Holder Unit.
- 3. Depress the Collar of the Reel Unit with a finger. (Fig. 4)
- 4. Remove the Washer, CBF-045, with a screw driver.
- 5. Remove the Bushing by inserting a screw driver (-) between the Bushing and the Reel and prying it. (Fig. 4)
- 6. Remove the Collar and Spring.
- 7. Remove the burrs on the Reel, if any, to get the smooth movement of the Collar and Bushing.
- 8. Put on the new Spring CBH-471, return the Collar, put on the new Bushing, CNV-885, and net next, the new Washer CBF-088. (Fig. 5)
- 9. Return the Holder Unit. Do not forget the E-ring.



SERVICE INFORMATION

No. SI-C8018

HODEL: GM-40, KPH-9000, KPH-838, KPH-636

SUBJECT: Circuit modification of Amplifier Unit (CWH-059).

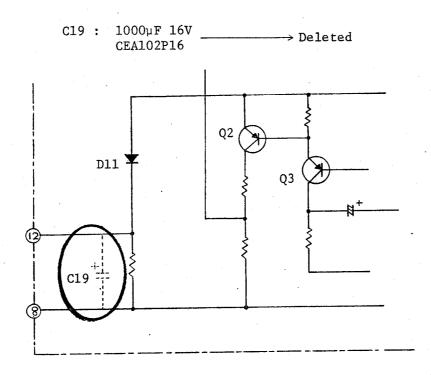
REASON:

To prevent troubles at high line impedance of Power Supply (More than 1Ω).

(When using a thin core cord or connector has a poor contact

point.)

- When GM-40 is combined with cassette deck, cassette tape may eject right after the cassette tape is inserted into the deck.
- \circ Protection circuit is became improper operation at high power output.



SERVICE MANUAL PAGE:

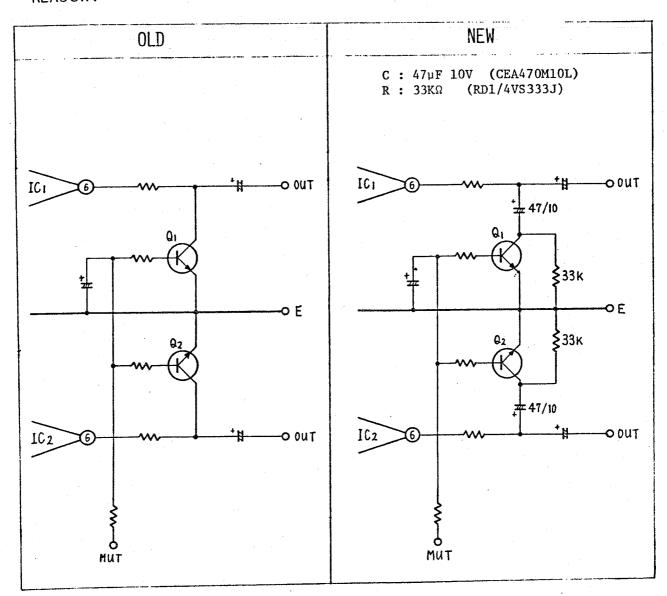
APPLICABLE SERIAL No.:

GM-40/E	11001∿	KPH-9000/U, C	14001∿
יי /ט	18001∿	KPH-838/U, C	11001∿
" /c	1001∿	KPH-838/E \	First lot∿
		KPH-636/E \$	TITSE TOE

Model: KP-66G, KP-88G, KPH-636, KPH-838, KPH-9000, KPX-600, KPX-9000

SUBJECT: Circuit modification of the pre amplifier unit.

REASON: To reduce the popping noise when muting circuit is on.



APPLICABLE MONTH: March 1979

Model: GM-40, KPH-9000, KPH-838, KPH-636

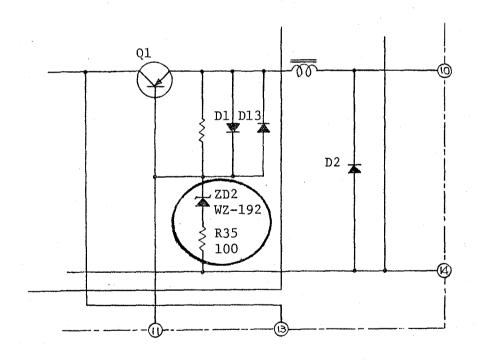
SUBJECT: Circuit modification of Amplifier Unit (CWH-059).

REASON: To prevent breakdown of transistor Q1(2SB410P or 2SB411P) by

counter electromotive force when chattering is generated switch

of cassette deck.

ZD2 : Added \longrightarrow Zener diode WZ-192 R35 : Added \longrightarrow 100 Ω RD1/4PS101J



SERVICE MANUAL PAGE:

APPLICABLE SERIAL No.:

GM-40/E	11001∿
" /U	2801∿
" /C	First lot∿
КРН-9000/U, С	14001∿
KPH-838/U, C	11001∿
КРН-838/Е]	First lot∿
KPH-636/E ∫	TIISC TOC